Massachusetts Fire Incident Reporting System

2000 Annual Report

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Fireman's Prayer

When I am called to duty, God
Wherever Flames may rage
Give me the strength to save some life
Whatever Be its age
Help me embrace a little child
Before it is too late
Or save an older person from
The horror of that fate
Enable me to be alert and
Hear the weakest shout
And quickly and efficiently
To put the fire out
I want to fill my calling and
To give the best in me
To guard my every neighbor
And protect their property
And if according to your will
I have to lose my life
Please bless with your protecting hand
My children and my wife

-Unknown

Foreword from the State Fire Marshal

Our Mission: *To preserve life and property from fire, explosion, electrical and related hazards through prevention, life safety education, investigation, regulation, law enforcement and technical assistance to fire departments, the public, and regulated trades and industries.*

April, 2002

This is the *2000 Annual Report of the Massachusetts Fire Incident Reporting System* (MFIRS) which summarizes the Massachusetts fire experience for 2000. It is based on the 24,931 individual fire reports submitted by members of 344 fire departments and fire districts. It is this effort that makes it possible to look at the total fire experience, to identify our fire problems and to develop strategies to address these issues. One of the goals of the Office of the State Fire Marshal is to provide the fire service and the public with accurate and complete information about the fire experience in Massachusetts.

No Fire Related Firefighter Deaths
In 2000, not a single Massachusetts firefighter lost his or her life while fighting a fire. After losing nine firefighters the previous year this is good news. Firefighter injuries declined 29% from the number reported in 1999.

Fires Down in 2000
The total number of reported fires decreased by 14% from 28,976 in 1999 to 24,931 in 2000. Structure fires fell 3% from 1999 to 2000. Motor vehicle fires decreased by 9%. Reported outside, brush, and other fires dropped by 26% during the same time period. The decrease in the total number of fires is due to fire prevention, education, enforcement of fire and building codes and arson investigation. Although the law states that only fires where a loss is sustained must be reported, many fire departments are wisely reporting all of the fire incidents that they respond to, giving a more accurate picture of the fire problem in Massachusetts.

Civilian Fire Deaths Up 49% in 2000
Civilian deaths in all types of fires increased by 49% from 53 in 1999 to 79 in 2000. Forty (40) men, 28 women, and 11 children died in Massachusetts fires. Of the 79 fire related civilian deaths in 2000, 56 occurred in residential structure fires. Almost three-quarters of civilians died in the “safety” of their own homes. Thirteen (13) deaths occurred in vehicle fires in 2000. Three people died in three outside and other fires in 2000.

Cooking Caused More Than Half of Fires in the Home – Stand By Your Pan
The leading cause of fires in the home in 2000 was cooking. Cooking caused more than half, 54%, of residential fires. Adhering to some simple rules will significantly decrease the likelihood of cooking related fires. Since we must cook to eat everyday, it is important to practice fire safety in the kitchen. Steps such as “standing by you pan” or not leaving cooking unattended, setting timers to remind yourself that you are cooking; turning handles in toward the stove; and keeping combustibles a safe distance from the stove are all examples of good fire prevention around the stove. Learning what to do if a

fire does occur is also important because cooking is the leading cause of fire injuries as well. The other leading causes of fires in the home are heating, electrical, smoking, arson, candles, dryers, and children playing with fire.

Smoking Was the Leading Cause of Residential Fire Deaths
Once again smoking has claimed the distinction of being the leading cause of fatal fires and fire deaths in Massachusetts, with no other cause coming close. Smoking remains the leading cause of fires that kill. In 2000, the unsafe and improper use of smoking materials caused 19 fire deaths in 18 fatal fires, accounting for 34% of residential structure fire deaths and 38% of fatal residential structure fires.

Smoking Fires Pose High Risk to Older Adults
Older adults are at high risk of dying in fires caused by smoking. Over one-third, or 35%, of the 23 senior residential structure fire deaths occurred in smoking-caused fires.

Smoke Detectors Save Lives
A working smoke alarm can double a family's chances of surviving a fire. This report illustrates the continuing problem in Massachusetts of disabled smoke alarms. Usually the battery has been removed or the power source disconnected. A smoke detector that does not work is useless.

Lack of Working Detectors Contributing Factor in Fire Deaths
More than half (60%) of residential fire victims were not alerted by smoke detectors. In just under half of these cases (47%), the victims were not alerted because no detectors were present at all, and in just over half (53%), because detectors were present but did not operate.

Almost 1/3 of Residential Fires Occurred in Homes With No Working Detectors
Unfortunately, in 31%, or about 1/3, of the residential structure fires, there were no working smoke detectors. Of this 31%, no detectors were present at all in 11% of the residential structure fires, and detectors were present but failed to operate in 20% of residential fires. Maintenance and testing of smoke detectors can save lives. People must realize fire can happen to them, and take precautions to ensure survival.

Candle Fires Down 15%
The year 2000 may be the beginning of a new downward trend thanks to stronger public education and tougher industry standards. There was a 15% drop from the all time high of 332 reported candle fires in 1999. During this year, my office began reaching out to candle manufacturers and retailers in Massachusetts to ask for their help in educating consumers on candle fire safety and to highlight and separate fire safety information from other safe use tips. He also asked them to adopt the candle **Circle of Safety** logo, to use it in their printed materials and on their webpages.

People Who Try to Put Fire Out Themselves More Likely to be Injured
The majority of victims injured in fires in 2000 were attempting to fight the fire. People who were awake at the time of the fire were much more likely to try to fight it themselves. Those who attempt to control a fire, rather than escape and summon professional firefighters, are much more likely to suffer injuries. Men are more likely to

be injured while attempting to control the fire than are women. Prevention of these types of injuries is to make and practice a home escape plan and leave firefighting to the professionals. They have the training and the protective clothing to do the job.

Prevention Efforts Can Make Your Home Safer
Over three-quarters (78%) of structure fires and 89% of structure fire deaths took place in residential occupancies. Efforts to reduce the incidence of fire and fire deaths must be focused on home fire safety to have the greatest impact. Increased maintenance of smoke alarms, installation of residential sprinklers, practice of home escape plans coupled with safer products such as self-extinguishing cigarettes, upholstered furniture that meets the California flammability standard and flame resistant sleepwear for all ages can help make homes, and the families who live in them, safer from fire.

1-& 2-Family Homes Least Likely to Have Working Detectors
In 2000, home hotels were the most likely residential occupancy to have operating smoke detectors. Dormitories were the next most likely while one- and two-family homes were the least likely to have working smoke detectors.

Vacant Buildings Threaten Community
Vacant buildings pose a serious threat to the surrounding community. They become targets for vandalism. Children may find them attractive play spaces. Drug users or dealers may utilize the space for their activities. The homeless may seek shelter inside them and set fires to keep warm. Arsonists who enjoy fires may consider these buildings to be available for their use and entertainment. All of these activities threaten the safety of firefighters, the neighborhood and surrounding homes.

Local Efforts of Marking Vacant Buildings Lead to Statewide Action
In December of 2000, in response to the fire at Worcester Cold Storage Warehouse which claimed the lives of six Worcester firefighters, the Board of Fire Prevention Regulations passed an emergency amendment requiring a simple, statewide system of marking vacant buildings. The marking system requires a joint inspection by fire and building officials to determine whether it is safe for firefighters to conduct an interior fire attack. That same month the Board of Building Regulations and Standards passed a similar emergency amendment to its regulations. This amendment also required vacant buildings to be boarded up using the so-called “HUD method.”

3 People Died While Working on Lawnmowers
Three Massachusetts residents died while they were either fixing or refueling lawnmowers. In one instance the victim’s cigarette ignited the flammable gasoline vapors. In the other two incidents the lawnmower’s engine was still hot from previous use and gasoline that came into contact with it ignited. The heat and smoke quickly overcame the victims. When working with any flammable substance one must remember to take appropriate precautions. Provide adequate ventilation, prohibit smoking and handle with extreme care.

MFIRS Is a Partnership

By law, fire departments are required to report any fire resulting in a dollar loss or a human casualty to the Office of the State Fire Marshal, using the Massachusetts Fire Incident Reporting System. Fire departments may report other fires and are encouraged to do so, giving a more accurate representation of the fire problem in their community. We forward MFIRS data to the U.S. Fire Administration where it is merged with data from the rest of the country to form a picture of the national fire problem. This data is shared with other government agencies, industry, and the media.

We wish to thank the members and chiefs of fire departments for providing this office with the valuable statistical data that forms the backbone of the annual report. We also wish to recognize the efforts of the staff of the Fire Data and Public Education Unit, Derryl Dion, research analyst, Pavel Gorelik, programmer, and Usha Patel, data-entry clerk, within the Office of the State Fire Marshal who manage the Massachusetts Fire Incident Reporting System and prepared this report.

This is the Last Year Using MFIRS 4.1 Data

2000 is the last year that fire incident reporting data will be analyzed using version 4.1 reporting format and data codes. This ends nearly 20 years of analysis using these codes. Beginning with 2001, Massachusetts fire incidents will be analyzed using the new version 5.0 codes. We hope this new version of the reporting system will allow us a greater opportunity to complete a more in-depth analysis of the fire problem in Massachusetts.

Fire Departments Do More Than Fight Fires

Although this report is about Massachusetts' fires, it is important to remember that fire departments have many other responsibilities including fire prevention and code enforcement, emergency medical services, hazardous materials response, public fire education and assisting the public with other emergencies. We honor the courage, dedication, and hard work of these individuals who are willing to risk their lives to keep us safe.

Using This Report

The information in this report is presented in self-contained sections. When applicable, material is repeated so that the reader can find the relevant material without reading the entire document. We encourage you to use this information.

We would like to thank the Massachusetts Property Insurance Underwriting Association for printing this report and for their support throughout the year.

We also wish to thank Acting Governor Jane Swift, and Public Safety Secretary James P. Jajuga for their commitment and support to the Massachusetts fire service through the Department of Fire Services.

Stephen D. Coan
State Fire Marshal

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Executive Summary

"All…fires or explosions by which a loss is sustained shall be reported… to the State Fire Marshal on forms furnished by the department, and shall contain a statement of all facts relating to the cause and origin of the fire or explosion that can be ascertained, the extent of damage thereof, the insurance upon the property damaged, and such other information as may be required."

-Massachusetts General Laws, Chapter 148, Section 2.

10,279 Structure Fires, 5,473 Vehicle Fires, 9,176 Outside & Other Fires in 2000
There were 24,931 fire and explosion incidents reported by fire departments to the Massachusetts Fire Incident Reporting System (MFIRS) in 2000. The 10,279 structure fires, 5,473 motor vehicle fires, and 9,176 outside and other fires caused 79 civilian deaths, 619 civilian injuries, 837 fire service injuries, and an estimated dollar loss of $189 million in property damages. In 2000 there were three civilian deaths for every 1,000 fires.

All Fires Down in 2000
The total number of reported fires decreased by 14% from 28,976 in 1999 to 24,931 in 2000. Structure fires fell 3% from 1999 to 2000. From 1999 to 2000, motor vehicle fires went down 9%. Outside, brush, and other fires dropped 26% during the same time period.

Although the law states that only fires where a loss is sustained must be reported, many fire departments are wisely reporting all of the fire incidents that they respond to, giving a more accurate picture of the fire problem in Massachusetts.

Cooking Was the Leading Cause of Residential Structure Fires
Thirty-seven percent (37%) of residential structure fires were caused by unattended and other unsafe cooking practices in 2000. Forty-three percent (43%) of residential structure fires originated in the kitchen.

No Firefighter Deaths in 2000
After losing eight firefighters in the line of duty in 1999, there were no fire service fatalities in 2000. Firefighter injuries decreased by 29% from the previous year.

Civilian Fire Deaths Up 49% in 2000
Civilian deaths rose by 49% from 53 in 1999 to 79 in 2000. Forty men, 28 women, and 11 children died in Massachusetts fires. Of the 79 civilian deaths in fires in 2000, 56 occurred in residential structure fires; seven occurred in non-residential structure fires. Almost three-quarters of civilians died in the “safety” of their own homes. The majority of these victims died at night, while they were sleeping and did not have working smoke detectors. It is also important to remember that detectors only provide an early warning of a fire. They do not guarantee an escape. It is important to plan and practice an escape plan.

Thirteen (13) deaths occurred in motor vehicle fires in 2000. Three people died in four outside and other fires in 2000.

Smoking Was the Leading Cause of Residential Fire Deaths
For years, smoking has been far and away the leading cause of fatal fires and fire deaths in Massachusetts, with no other cause coming close. In 2000, the improper use and disposal of smoking materials caused 19 fire deaths, nine men and 10 women, in 18 fatal fires. The unsafe and improper disposal of smoking materials caused 34% of residential structure fire deaths and 38%, or one-third, of fatal residential structure fires.

Almost 1/3 of Residential Fires Occurred in Homes With No Working Detectors
Unfortunately, in 31% of the residential structure fires, there were no working smoke detectors. No detectors were present at all in 11% of the residential structure fires. Detectors were present but failed to operate in 20%. The fire was too small to activate the detector in 8% of residential fires. Detectors operated in 61% of residential structure fires. These percentages were calculated for 6,666 fires where the detector performance was known.

Detectors Operated in 56% of Structure Fires that Caused Injuries
Of the 473 civilian injuries where detector performance was known, 56% occurred where smoke detectors were present and operated. This may be because when the occupant is alerted to the presence of the fire, they may try to extinguish it themselves and injure themselves during this task or during the escape after the situation has considerably worsened. When alerted to the presence of a fire, occupants should vacate the building and notify the fire department as soon as possible, letting the professionals with the proper training and gear extinguish the fire.

Structure Arson Down 15%
For statistical purposes, a fire is considered arson when the ignition factor is listed as incendiary or suspicious. Three thousand three hundred sixty (3,360) Massachusetts fires were considered arson in 2000. The 747 structure arsons, 798 vehicle arsons, and 1,815 outside and other arsons caused three civilian deaths, 21 civilian injuries, 115 fire service injuries, and an estimated dollar loss of $21.3 million.

Structure arson fell by 15%. Motor vehicle arsons fell 2% from 1999 to 2000, although since 1985, motor vehicle arson has fallen 84%. The steady decline of motor vehicle arsons can be explained by the enactment of the Burned Motor Vehicle Reporting Law, which took effect in 1987, and states that owners of burned vehicles must personally file a report at the fire station before they can collect on their fire insurance. Outside and other arsons decreased 30% from the 2,603 reported in 1999.

Massachusetts Fire Departments

Today's firefighters do far more than fight fires. Many are emergency medical technicians or paramedics. All firefighters must be trained to offer first aid if they arrive first at an emergency. They are the first ones called to deal with hazardous materials incidents ranging from the suspected presence of carbon monoxide to a leaking propane truck. They may be called to rescue a child that fell through the ice or that locked himself in the bathroom. They get people out of stuck elevators and wrecked cars. They test and maintain their equipment, ranging from self-contained breathing apparatus to hydrants to hoses and trucks. They know the basics of construction, electricity and chemistry. They report their fire incidents through the Massachusetts Fire Incident Reporting System so we can spot trends, problems and successes.

When most people think of the fire department, they think of fire trucks, sirens and flames. Actually, the fire department aims to prevent fires. If prevention failed, then the alarm comes in and the trucks roll.

Fire Department Enforces M.G.L. Chapter 148 and 527 CMR
The fire department is legally required to enforce the provisions of 527 Code of Massachusetts Regulations (CMR). This contains regulation sections on fireworks, dry cleaning, oil burners, gas stations, liquid propane, plastics, transportation of flammable liquids, above ground and underground storage tanks, manholes, electrical systems, explosives, storage of flammable substances, marine fueling, model rockets, lumber yards, bulk plants, tentage, salamanders, flammable decorations and curtains, cannon or mortar firing, fire extinguishers, smoke detectors, obstructions and hazards, combustible fibers, rubbish handling, crop ripening, pesticide storage, and welding and storage. The fire department must also enforce the laws contained in Massachusetts General Law Chapter 148.

Inspectors must know the regulations they are enforcing and they must know how to apply the regulations to situations in the community. They must communicate information about weaknesses in plans they review or violations and perform follow-up inspections. Just as firefighters are sent to the Massachusetts Firefighting Academy to learn the principles of suppression, fire prevention personnel go to classes to learn the ins and outs of the regulations. These functions also produce a corresponding amount of documentation that must be maintained.

Firefighters Teach the Community Fire and Burn Prevention
Firefighters go out in the community to teach children, the elderly and interested community groups how to protect themselves from fire and burns. The statistics in this report are critical to these educators in developing injury prevention programs.

The S.A.F.E. Program
The Student Awareness of Fire Education or S.A.F.E. program was implemented in fiscal year 1997. Because smoking materials continue to be the leading cause of fire deaths in

the state and nationwide, the Legislature approved $1,078,666 from the cigarette tax revenue to fund public fire education grants. These grants provide local fire departments with funding to educate children about the dangers associated with fire, particularly fires caused by smoking. Any city or town whose fire department is committed to working with school systems, public health or other community agencies to develop a well conceived and coordinated fire safety education program message is invited to apply for these grants. In fiscal year 2001, 230 fire departments participated in the S.A.F.E. program.

Middleborough Young Heroes Kenneth Currey and Joshua Bell
On December 16, 2000, 8-year old Josh and his 10-year old brother Kenny, smelled smoke when they entered their home. Both boys assisted their great-grandmother outside and summoned help from a neighbor passing by who called 9-1-1. Both boys received their fire safety education through the S.A.F.E. program sponsored by the Middleborough Fire and School Departments. Kenney and Josh are two of over 130 “young heroes” from the first six years of the S.A.F.E. Program. These young heroes are children that have found themselves in a real life emergency and responded correctly by using the life safety lessons they learned from firefighters in school.

95% of Massachusetts Fire Departments Participated in MFIRS
By law, fire departments are required to report any fire or explosion resulting in a human casualty or dollar loss to the Office of the State Fire Marshal. This is done through the Massachusetts Fire Incident Reporting System (MFIRS). Three hundred forty-four (344) Massachusetts Fire Departments reported at least one fire during 2000. Fifteen (15) reported that they had no fires that met the criteria. Ninety-five percent (95%) of the Massachusetts Fire Departments complied with fire incident reporting this year. As an added incentive to comply with the law, a community had to be participating in MFIRS to be eligible for the S.A.F.E. program and for the federal FIRE Act grants.

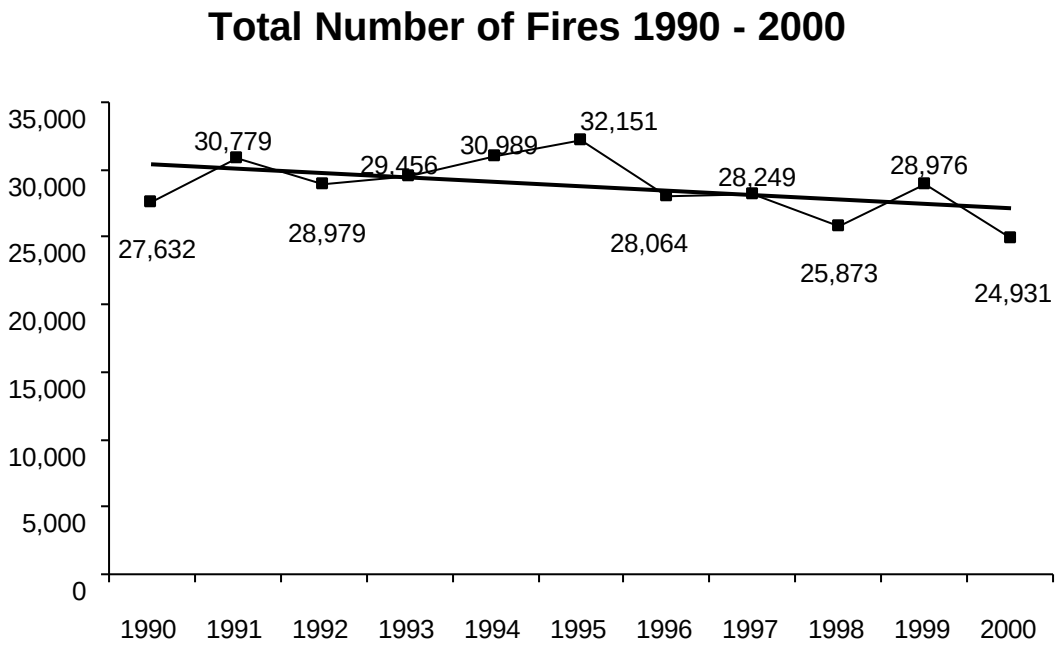
More and more departments are automating fire incident reporting and other department functions. In 2000, 42% of Massachusetts fire departments submitted their data electronically.

Fires by Type of Situation Found

24,931 Fire Incidents Reported in 2000
Massachusetts fire departments reported 24,931 incidents to the Massachusetts Fire Incident Reporting System (MFIRS) in 2000. The total number of incidents was down 14% from the 28,976 incidents reported in 1999.

The following table indicates the total number of fires and the subsequent breakdown into structure fires, motor vehicle fires and outside and other fires for the years 1990 through 2000. The graph following the table is a representation of this table for the total number of reported fires in the Commonwealth for that same time period. Note the overall downward trend in the total number of fires since 1990.

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires
2000	24,931	10,279	5,473	9,179
1999	28,976	10,595	6,011	12,370
1998	25,873	10,613	5,565	9,695
1997	28,249	11,452	6,096	10,701
1996	28,064	11,611	6,980	9,473
1995	32,151	11,689	6,612	13,850
1994	30,989	12,362	7,267	11,360
1993	29,456	11,605	7,234	10,617
1992	28,979	11,982	7,160	9,837
1991	30,779	11,394	7,808	11,577
1990	27,632	9,679	8,056	9,897



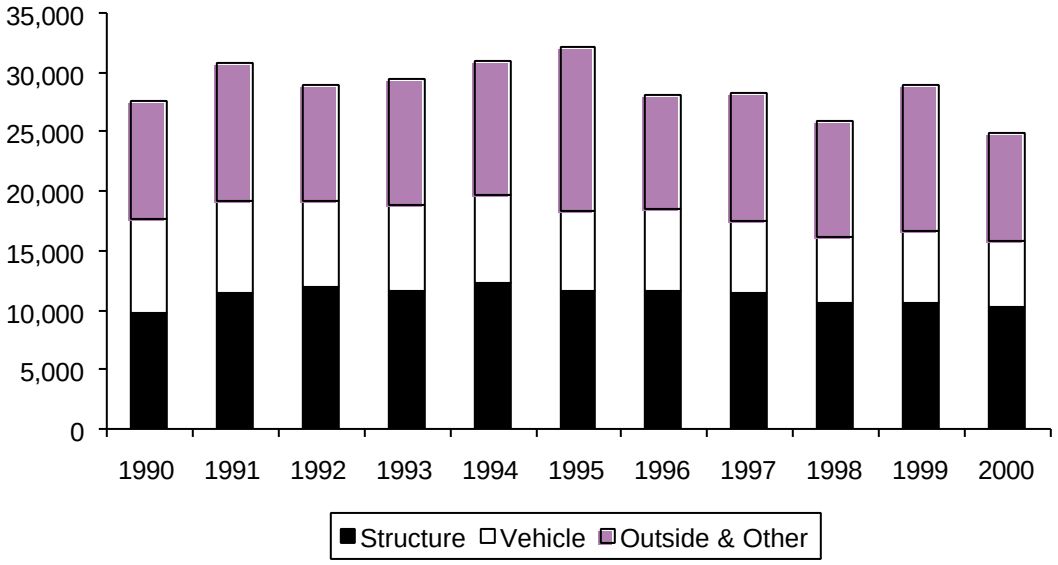
10,279 Structure Fires, 63 Civilian Deaths
Massachusetts fire departments reported 10,279 structure fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2000. These fires killed 63 civilians, caused 523 civilian injuries, 760 fire service injuries, and an estimated $155.7 million in property damage. Structure fires accounted for 41% of the total incidents and 80% of the civilian deaths in 2000. There were 747 structure arsons in 2000. Structure fires in the Massachusetts Fire Incident Reporting System include any fires that occur inside or on a structure.

5,473 Motor Vehicle Fires Account for Almost 1/4 of Reported Fires
The 5,473 motor vehicle fires caused 13 civilian deaths, 34 civilian injuries, 33 fire service injuries, and $20.6 million in property damage. These incidents accounted for 22% of the reported 24,931 fires in 2000. There were 798 motor vehicle arsons in 2000. Motor vehicle fires accounted for 16% of civilian fire deaths. Motor vehicle fires were down 9% from 1999. According to MFIRS, a motor vehicle fire is defined as one involving a car, truck, boat, airplane, construction equipment or other mobile property that does not occur inside a structure.

9,179 Brush Fires, Trash Fires, Outside Fires, and Explosions Reported in 1999
The 9,179 outside and other fires caused three civilian deaths, 62 civilian injuries, 44 fire service injuries, and an estimated dollar loss of $13.3 million. The 884 outside of structure fires, 4,067 tree, grass and brush fires, 2,799 trash fires, 152 explosions, 86 outside spills or leaks with ensuing fires, and 1,191 other fires accounted for 37% of the total fire incidents in 2000. These fires were down 26% from the 12,370 such outside and other fire incidents reported in 1999. There were 1,815 outside and other arsons in 2000. Fire departments are required to report any fire resulting in a dollar loss or human casualty to MFIRS. Fires that do not result in a loss may be reported. Many fire departments, particularly those that submit data electronically, voluntarily report these fires. These figures should be considered an underestimate of the “no loss” fire incidents to which fire departments actually responded.

The following graph depicts the breakout of the number of reported structure fires, motor vehicle fires and outside and other fires for the time period 1990 to 2000. During the first five years of this period (1990-1994) the total number of structure fires increased. However from 1995 through 2000 the number of structure fires steadily dropped. During the past 11 years motor vehicle fires have steadily declined. However, the trend for outside and other fires seems to be developing a ‘wave’ pattern whereas the number of these types of fires rises or ‘crests’ every three years.

Situation Found by Year 1990 - 2000

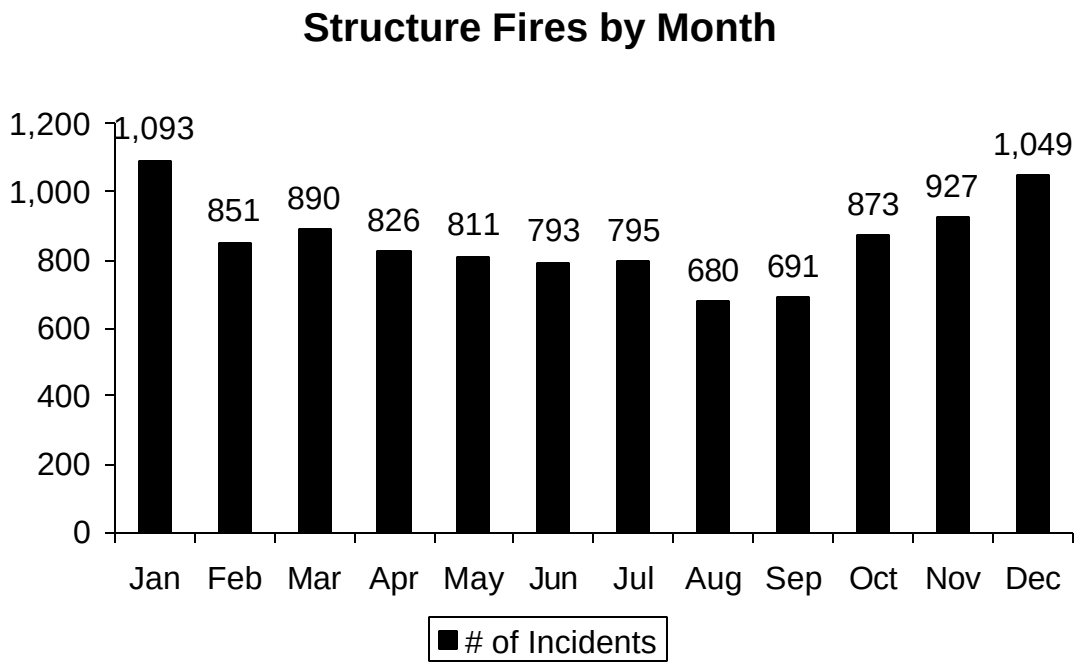


Structure Fires

10,279 Structure Fires Account for 41% of Reported Fires, 80% of Fire Deaths
The 10,279 structure fires caused 63 civilian deaths, 523 civilian injuries, 760 fire service injuries, and an estimated dollar loss of $155.7 million. The average structure fire caused $15,152 in property damage. Structure fires accounted for 41% of reported fires and 80% of the civilian fire deaths in 2000.

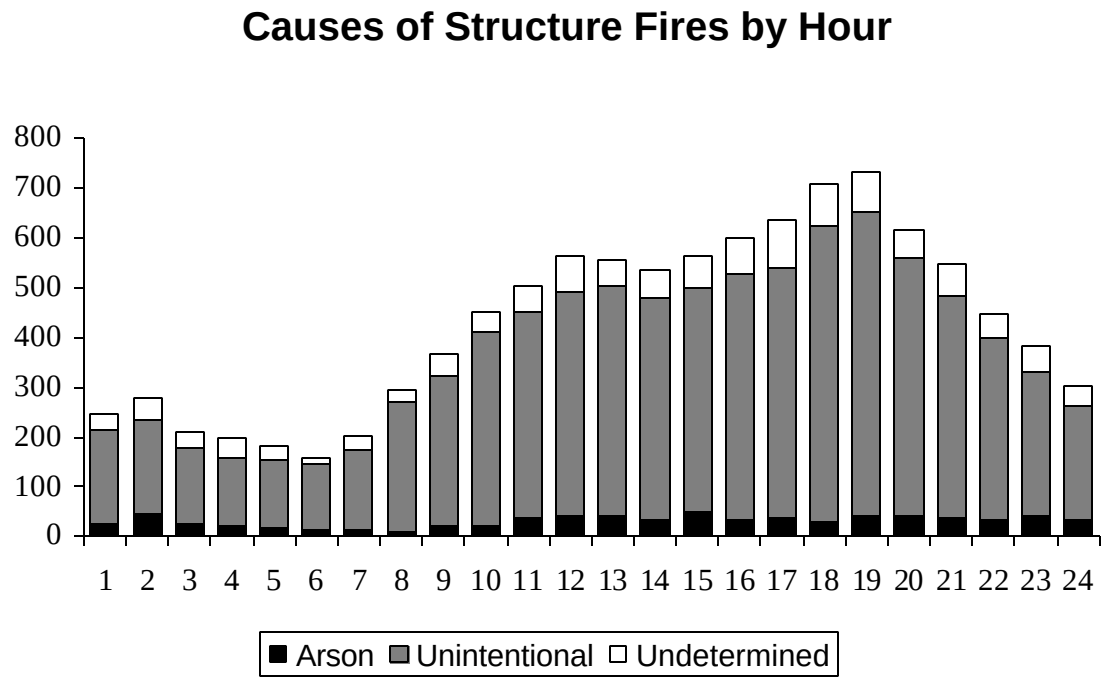
According to the MFIRS definition, any fire occurring inside or on a structure is considered a structure fire. This includes chimney fires, cooking fires, indoor waste basket fires, fires on a back porch, exterior trim fires, and vehicle fires that occur inside a garage. The number of structure fires fell by 3% from the 10,595 reported in 1999.

Structure Fires Most Common in Colder Months
Heating equipment plays a frequent role in structure fires. It is not surprising that January was the peak month for these incidents in 2000. December ranked second, November was third and March had the fourth largest number of structure fires. The warmer months had significantly fewer fires. The fewest fires occurred in August. September had the second lowest frequency of these incidents, and June and July had the third and fourth lowest number of structure fires in 2000.



Structure Fires Most Common Around Dinner Time
Cooking is the leading cause of structure fires. Predictably, structure fires occurred most often around dinnertime. Incendiary and suspicious structure fires were most common between 3:00 p.m. and 4:00 p.m. Accidental structure fires reached their lowest point between 3:00 a.m. and 6:00 a.m. and increased fairly steadily to a peak between 7:00 and 8:00 p.m.

The graph below shows fire frequency by time of day on the 24-hour clock for structure arsons, unintentional structure fires and structure fires of undetermined origin. A fire is considered arson when the ignition factor is incendiary or suspicious. Midnight to 1:00 a.m. is represented by 1; 1:01 a.m. to 2:00 a.m. is represented by 2, etc.



Over 3/4 of Structure Fires Occurred in Residential Occupancies
Over three-quarters, or 89%, of the state's 10,279 structure fires and 56 of the 63 structure fire deaths occurred in residential occupancies. The following table shows the number of structure fires, civilian deaths, civilian injuries, fire service injuries, estimated dollar loss and the percentage of total structure fires for each occupancy group. Institutional properties are those used for purposes such as medical or other treatment of persons suffering from physical or mental illness, disease, or infirmity; for the care of infants, convalescents, or aged persons; and for penal or corrective purposes. Utilities, laboratories and communications are considered basic industries. Special properties include construction or unoccupied properties and properties used for transportation.

STRUCTURE FIRES BY OCCUPANCY TYPE

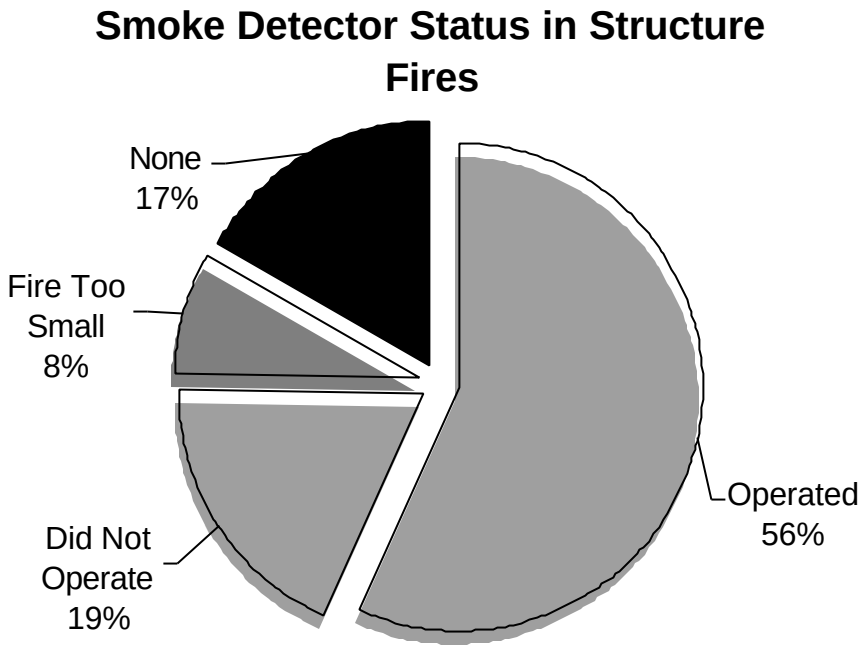
Occupancy	# of Fires	% of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
Public Assembly	334	3%	34	3	0	0	$8,803,832
Educational	258	3%	8	16	0	0	1,342,347
Institutional	251	2%	8	3	0	0	525,902
Residential	**8,005**	**78%**	**603**	**460**	**0**	**56**	**88,922,968**
1- & 2-Family Homes	*4,109*	*40%*	*286*	*245*	*0*	*37*	*48,583,767*
Apartments	*3,544*	*35%*	*304*	*177*	*0*	*18*	*38,403,650*
Other Residential	*352*	*3%*	*13*	*38*	*0*	*1*	*1,935,551*
Stores, Offices	569	6%	29	15	0	5	32,806,522
Basic Industry	67	1%	3	4	0	0	4,073,050
Manufacturing	250	2%	12	16	0	0	5,543,048
Storage	291	3%	32	3	0	2	9,449,497
Special Properties	159	2%	30	3	0	0	3,555,063
Unclassified	95	1%	1	0	0	0	723,169
Total	**10,279**	**100%**	**769**	**523**	**0**	**64**	**$155,745,398**

Occupancy Group Definitions

- **Public Assembly**: This category includes amusement and recreation places such as bowling alleys, skating rinks, ballrooms, gymnasiums, arenas, stadiums, playgrounds, churches, funeral parlors, clubs, libraries, museums, courtrooms, restaurants, taverns, passenger terminals, theatres and studios.
- **Educational**: This category includes classrooms from nursery school through college, and trade and business schools. Dormitories are considered residential.
- **Institutional**: This category includes institutions that care for the aged, the young, the sick or injured, the physically restrained, the physically inconvenienced and the mentally handicapped.
- **Residential**: This occupancy group includes one- and two-family homes, apartments, rooming, boarding or lodging houses, dormitories, hotels, motels and home hotels. Seasonal homes are included here.
- **Stores, Offices**: Retail establishments, service stations, laundries, offices, banks, medical offices and post offices are included in this category.
- **Basic Industry**: This category includes nucleonics, energy production plants, laboratories, communications facilities, defense facilities, document facilities, utility and energy distribution systems, agriculture, forests, hunting and fishing, mining, and manufacturing of mineral products such as glass, clay or cement.
- **Manufacturing**: Manufacturing that is not listed under Basic Industry is listed here.
- **Storage Property**: This category includes warehouses, barns, garages and tool sheds.
- **Special Property**: This category includes buildings under construction or demolition, vacant property, outbuildings, bridges, roads, railroad property, outdoor properties, water areas, aircraft areas and equipment operating areas.

Written Permit Required Before Disconnecting Fire Protection Devices
Before a building owner can disconnect or shut off any fire protection device he must receive permission in the form of a written permit from the local fire department. Under the provisions of MGL Chapter 148, Section 27A, it is illegal to "…shut off, disconnect, obstruct, remove or destroy… any part of any sprinkler system, water main, hydrant, or other device used for fire protection… without first procuring a written permit from the head of the fire department." The head of the fire department is authorized to issue conditions necessary to provide protection from fire and the preservation of public safety. In the event of an emergency, the system may be shut down as long as the fire department head is immediately notified of the action and when the system is back in service. Violators may be punished by imprisonment for not more than one year and/or a fine of not more than $1,000.

Detectors Sounded the Alarm in 56% of Structure Fires
Smoke or heat detectors sounded the alarm in 56% of the 8,496 structure fires for which detector status was known. Smoke detectors failed to alert occupants in 36% of the structure fires in 2000; smoke detectors were present but did not operate in 19% of these fires and no detectors were present in 17% of the structure fires. In 8%, the fire was too small to activate the detector. Detector status for structure fires was undetermined or not reported in 1,783 incidents. These incidents were excluded from the percentage calculations.



The following table shows detector performance by occupancy type for structure fires.

DETECTOR PERFORMANCE	Operated	Did Not Operate	Fire Too Small	None	Unknown	Total
Public Assembly	118	47	38	82	49	334
Educational	119	45	32	38	24	258
Institutional	169	25	22	13	22	251
Residential	4,095	1,326	532	713	1,339	8,005
Stores, Offices	179	84	46	158	102	569
Basic Industry	25	3	4	28	7	67
Manufacturing	72	24	12	85	57	250
Storage	21	14	2	191	63	291
Special Properties	13	9	2	93	42	159
Unclassified	5	2	0	10	78	95
Total	**4,816**	**1,579**	**690**	**1,411**	**1,783**	**10,279**

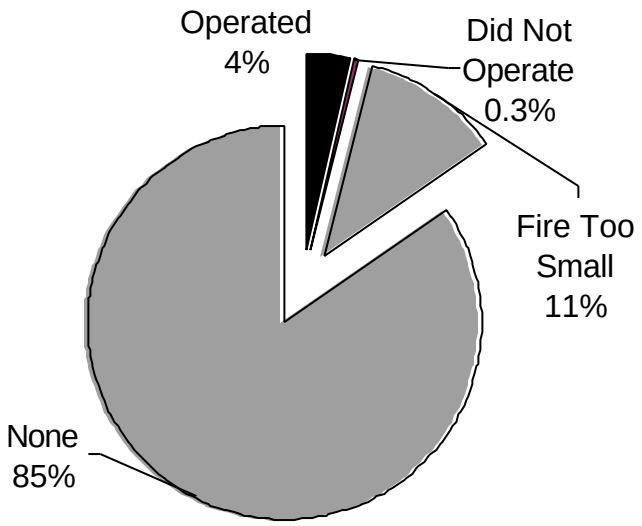
Newton Office Building Fire had Greatest Loss of Life & Dollar Loss

- On February 9, 2000 at 12:08 p.m. the Newton Fire Department was called to a multiple fatal fire in anoffice building of undetermined cause. There were five victims, three men and two women. All five were overcome by heat and smoke while escaping and died from burns and smoke inhalation. Four firefighters and one other civilian were injured at this fire. Fire service personnel made eight rescues from the building. Smoke detectors were present and operating only in the recently renovated first floor restaurant. This was the largest loss fire in 2000. The fire department was on scene for approximately 35 hours and 2 minutes. Damages from this fire were estimated at $21,000,000.

Sprinklers Operated in 4% of Fires

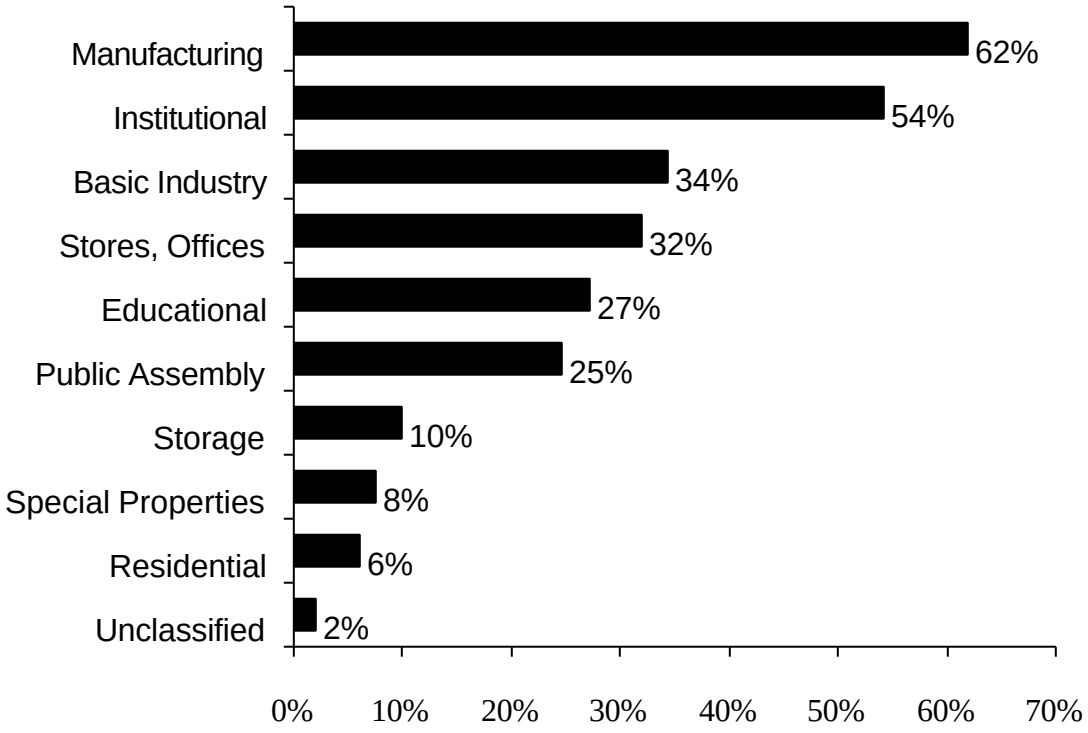
Sprinklers were present and operated in 4% of the 7,715 structure fires for which sprinkler status was known. Sprinklers were present, but the fire was too small to activate them in 11% of fires. Sprinkler equipment was present but did not operate in less than 1%. No sprinkler equipment was present in 85% of structure fires. Sprinkler performance was undetermined or not reported in 2,564 incidents. These incidents were excluded from the percentage calculations.

Sprinkler Status in Structure Fires



Manufacturing & Institutional Properties More Likely to Have Sprinklers
Overall, 11% of the structure fires in 2000 occurred in buildings that had sprinklers, regardless of whether the fire was large enough to activate the sprinkler. Manufacturing and institutional properties were the most likely to be sprinklered. Sixty-two percent (62%) of the fires in manufacturing facilities and 54% of the fires in institutional properties occurred in buildings with sprinklers. Only 6% of the residential fires occurred in sprinklered structures.

Fires In Sprinklered Buildings by Occupancy



The table below shows sprinkler performance by occupancy group.

SPRINKLER PERFORMANCE

	Operated	Did Not Operate	Fire Too Small	None	Unknown	Total
Public Assembly	18	4	60	171	81	334
Educational	6	2	62	115	73	258
Institutional	7	1	128	55	60	251
Residential	100	9	370	5,532	1,994	8,005
Stores, Offices	55	5	122	252	135	569
Basic Industry	6	1	16	35	9	67
Manufacturing	61	3	91	54	41	250
Storage	10	1	18	209	53	291
Special Properties	7	1	4	107	40	159
Unclassified	1	0	1	15	78	95
Total	**271**	**27**	**872**	**6,545**	**2,564**	**10,279**

High Rise Buildings Must be Fully Equipped with Sprinklers

Evacuating a high rise building while fighting a raging fire is a logistical nightmare for firefighters. Automatic sprinklers make these buildings much safer for residents, office workers, visitors and firefighters. Under the provision of MGL Chapter 148, Section 26A 1/2, all existing buildings of more than 70 feet in height above the mean grade had to be fully protected by an adequate system of automatic sprinklers by March 30, 1998.

Written Permit Required from Fire Department before Disconnecting Sprinklers

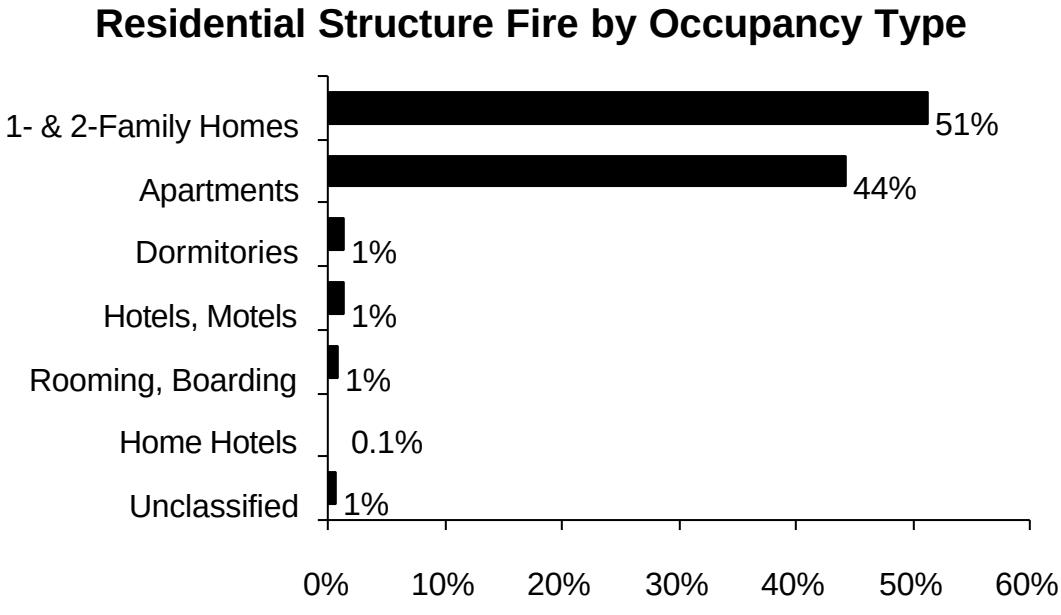
Massachusetts General Law (MGL) Chapter 148, Section 27A requires written authorization from the local fire chief before disconnecting a sprinkler system. This also includes disconnecting the system for regular maintenance and repair. Violators may be punished by imprisonment for not more than one year and/or a fine of not more than $1,000.

Residential Structure Fires

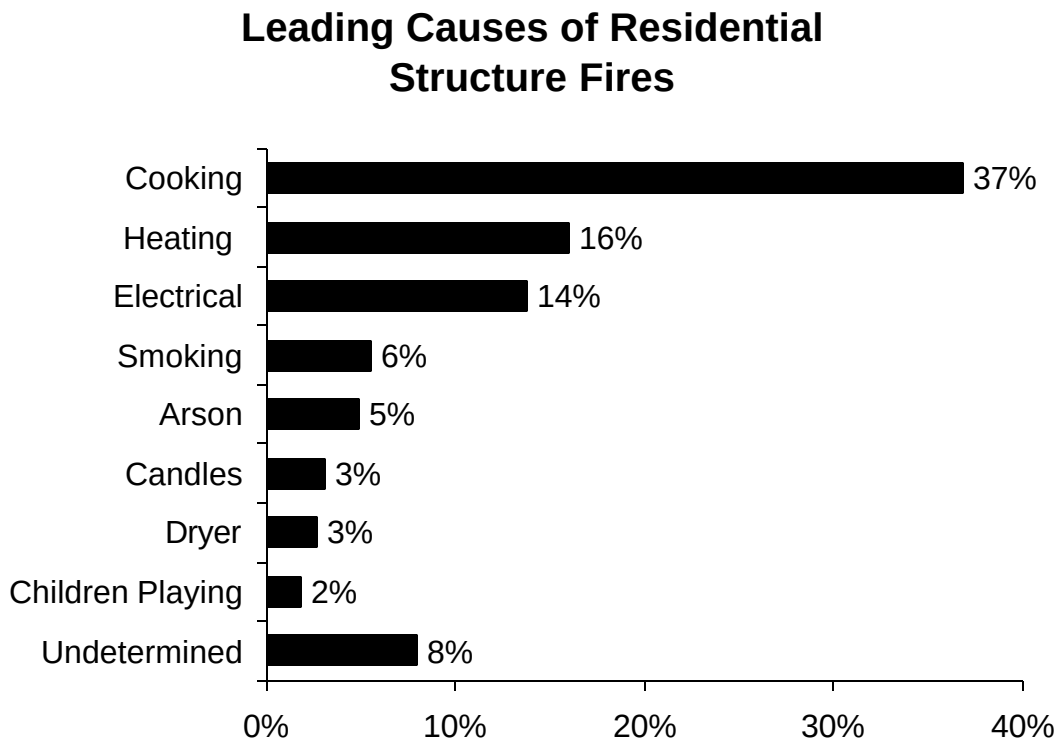
78% of Structure Fires Occurred in Residential Occupancies
Massachusetts fire departments reported that 8,005, or 78% of the 10,279 structure fires occurred in residential occupancies. These fires caused 56 civilian deaths, 460 civilian injuries, 603 fire injuries and an estimated dollar loss of $89 million. The average dollar loss per fire was $11,108. The total number of reported residential structure fires went down 2% from the 8,187 reported in 1999. The following table shows the statistics for fires, firefighter and civilian casualties and the estimated dollar loss by residential occupancy.

RESIDENTIAL STRUCTURE FIRES

Occupancy	# of Fires	% of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
1- & 2- Family Homes	4,109	51.0%	286	245	0	37	$48,583,767
Apartments	3,544	44.0%	304	177	0	18	38,403,650
Rooming Houses	70	1.0%	4	2	0	0	236,943
Hotels & Motels	108	1.0%	3	7	0	0	1,010,760
Dormitories	115	1.0%	4	19	0	1	320,116
Home Hotels	5	0.1%	0	0	0	0	1,400
Unclassified	54	1.0%	2	10	0	0	366,332
Total	**8,005**	**100%**	**603**	**460**	**0**	**56**	**$88,922,968**



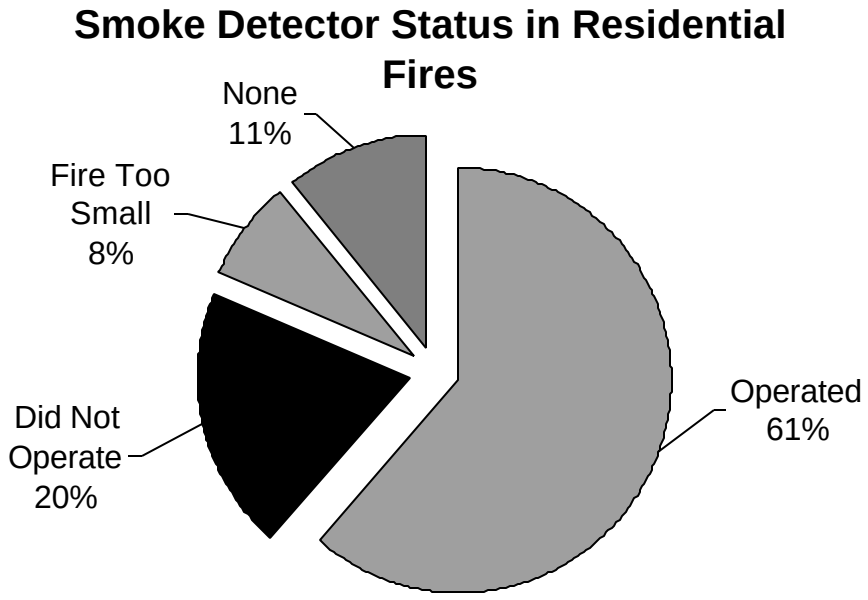
Cooking Leading Cause of Residential Structure Fires
The leading causes of residential structure fires in 2000 were cooking, electrical, heating, arson, smoking, candles, dryers, and children playing with fire. Cooking was the leading cause of residential structure fires accounting for 37% with 2,948 incidents. Heating accounted for 1,279, or 16%, of incidents of which chimney fires caused 449, or 6%, of the total incidents. Electrical problems caused 1,105, or 14%, of incidents. Only 8%, or 638, of the total residential structure fires were of undetermined cause. The unsafe use and disposal of smoking materials accounted for 444, or 6%, of incidents. Arson accounted for 394, or 5%, of residential structure fires. Three percent (3%), or 250, were caused by candles. Dryer fires were the cause for 214, or another 3%, of these incidents. Children playing with fire accounted for 145, or 2%, of residential structure fires in 2000.



43% of Residential Fires Start in the Kitchen
For residential structure fires where area of origin was reported, 43% of the fires started in the kitchen. Eight percent (8%) started in the bedroom; 5% started in heating equipment rooms; another 5% started in the chimney; 4% started in the living room; and 4% started in the laundry room in 2000. Area of origin was unknown in 287 incidents. These incidents were excluded from the percentage calculations.

Detectors Sounded in 61% of Residential Fires
Smoke or heat detectors were present and operated in 61% of the 6,666 residential structure fires for which detector performance was known. Detectors were present but did not operate in 20%, of these incidents. No detectors were present in 11% of the

residential fires. In 8%, the fire department reported that the fire was too small to trigger the detector. Smoke detector performance was not reported or not classified in 1,339 incidents. These fires were excluded from the percentage calculations.



Houses Must Have Detectors at Time of Sale
Under the provisions of Massachusetts General Law Chapter 148, Section 26F, all buildings containing one to five dwelling units must be equipped by the seller with approved smoke detectors upon the sale or transfer of the building as provided in Section 26E. This statute took effect on January 1, 1982. Many homes changed hands during the real estate boom of the 1980's. While many owners had not installed detectors to protect themselves, they did install these devices to sell their home. The new owners were then protected by an early warning system.

Studies have indicated that not unlike any other appliance in your household, smoke detectors have a shelf life. The shelf life for a typical smoke detector whether it is battery-powered or hard-wired is 10 years.

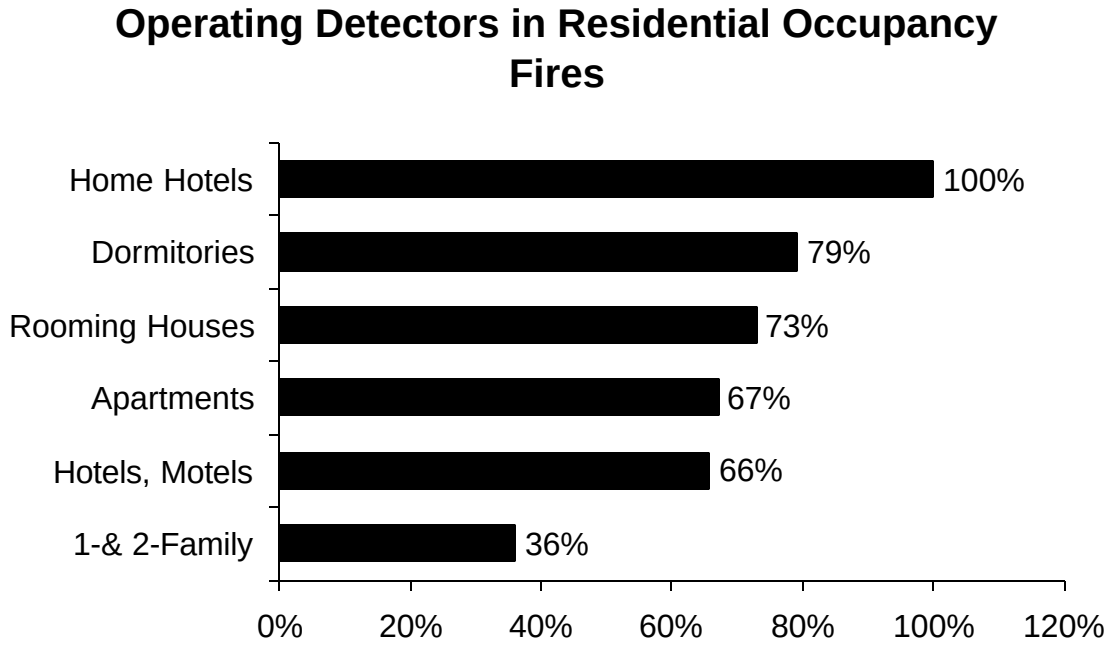
Automatic smoke detectors are required at all times in buildings containing three or more residential units. Local communities may elect to adopt Massachusetts General Law Chapter 148, Section 26E (a). This statute requires owners of one- and two- family homes to install smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above.

New Homes Must Have Detector in Bedroom Area
At a minimum, smoke detectors should be installed on every floor of the home and at the bottom of the basement stairwell. Since 1997, the Massachusetts Building Code has required smoke detectors within the bedroom area in all *new* residential occupancies. When a bedroom door is shut, it can help prevent the spread of fire from room to room.

Unfortunately, a shut door also makes it harder to hear a smoke detector sounding in the hallway. People who sleep with their bedroom door closed should install a detector inside their bedroom. After detectors are installed, they need to be regularly tested and maintained. All the detector can do is sound the alarm. Everyone needs to develop and practice the escape routes they would use in the event of a fire.

Photoelectric detectors are required near kitchens and bathrooms in new homes in order to minimize so-called nuisance alarm activations. Since August of 1997, the sixth edition of the State Building Code has required that the photoelectric detectors be installed when proper placement is within 20 feet of a kitchen or bathroom. Since this affects only new construction and major renovations, it will be some time before we can measure the impact of this regulation.

1- & 2-Family Homes Least Likely to Have Working Detectors
Home hotels were the most likely residential occupancy to have operating smoke detectors. However there were only five fires in home hotels and all five incidents had working smoke detectors. Dormitories were the next most likely residential occupancy to have operating smoke detectors while one- and two-family homes were the least likely. The following chart shows the percentage of operating smoke detectors in residential occupancies.



36% of Residential Fire Deaths Occurred with No Working Detectors
Eighty-nine percent (89%) of all 2000 fire deaths took place in residential occupancies, or the so-called "safety" of people's homes. Overall, 36% of the 56 residential structure fire deaths occurred in buildings with no working detectors; 21% took place in homes where detectors did not operate and 14% of deaths occurred where there were no detectors present at all. Twenty-five percent (25%) of residential structure fire deaths occurred

where smoke detectors were present and operated. Smoke detector status was unknown for 41% of these deaths.

Sprinklers Present in Only 7% of Residential Structure Fires
Sprinklers were present and operated in 1% of the 5,965 residential structure fires where sprinkler performance was known in 2000. In less than 1% of the fires in residential occupancies, the sprinkler systems did not operate. In 6%, the fire was too small to activate the system. In 92% of the cases, there were no sprinkler systems present or installed. Sprinkler performance was not classified for 1,909 incidents involving residential structure fires.

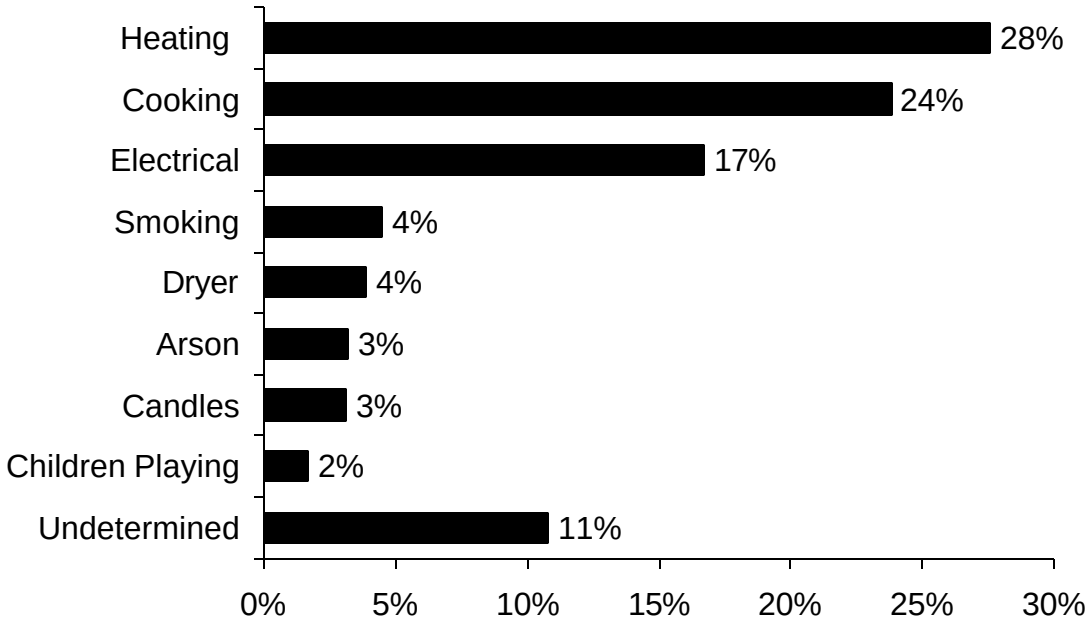
Only You Can Make Your Home Safer for You and Your Family
Over three-quarters (78%) of structure fires and 89% of fire deaths took place in residential occupancies. Efforts to reduce the incidence of fire and fire deaths must be focused on home fire safety to have the greatest impact. Increased maintenance of smoke alarms, installation of residential sprinklers, practice of home escape plans coupled with safer products such as self-extinguishing cigarettes, upholstered furniture that meets the California flammability standard, and flame resistant sleepwear for all ages can help make homes and the families who live in them safer from fire.

Fires in One- and Two-Family Homes

4,109 Fires, 37 Civilian Deaths, $48.5 Million in Damage
Four thousand one hundred and nine (4,109) structure fires in one- and two-family homes caused 37 civilian deaths, 245 civilian injuries, 286 fire service injuries, and an estimated $48.5 million in property damage. In 2000, 51% of the Commonwealth's 8,005 residential structure fires occurred in one- and two-family homes. Fires in one- and two-family homes were down 2% from 4,036 in 1999.

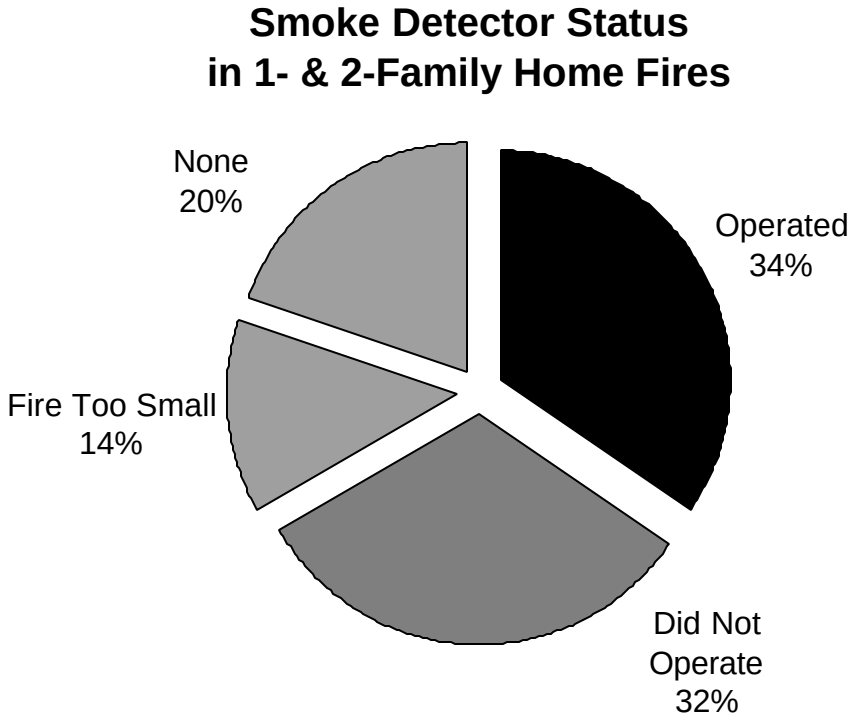
Heating and Cooking Were Leading Causes
Heating caused 28% of incidents occurring in one- and two-family homes, with chimney fires accounting for 439, or 11%, of these fires. The next leading cause of fires in one- and two-family homes was cooking, accounting for 24%. Seventeen percent (17%) of one- and two-family residential structure fires were caused by electrical problems. Dryer fires were the point of ignition for 4% of the one- and two-family structure fires. The unsafe and improper use of smoking materials also caused 4% of the fires. Arson accounted for 3% of the fires in this category. Candle fires accounted for another 3% of the fires in one- and two-family homes. Children playing with fire accounted for 2% of these fires. There was no cause determined in 11% of the fires in the one- and two-family structures.

Leading Causes in 1- & 2-Family Homes



29% of Fires in 1- & 2-Family Homes Started in the Kitchen
For fires in one- and two-family homes where area of origin is known, 29% started in the kitchen. Ten percent (10%) started in the chimney; 8% started in the bedroom; 7% started in rooms or areas with heating equipment; 5% started in the laundry room; another 5% started in the living room; 4% started in the exterior wall surfaces and another 4% started in crawl or substructure spaces. Area of origin was undetermined in 161 incidents. These incidents were excluded from the percentage calculations.

Detectors Did Not Operate in 1/3 of One- and Two-Family Home Fires
Smoke or heat detectors were present and operated in 34% of the 2,611 one- and two-family residential structure fires for which detector performance was known. Detectors were present but did not operate in 32% of these incidents. No detectors were present in 20% of the residential fires, which took place in a one- or two-family home. In 14%, the fire department reported that the fire was too small to trigger the detector. Smoke detector performance was not reported or not classified in 921 incidents. These fires were excluded from the percentage calculations.



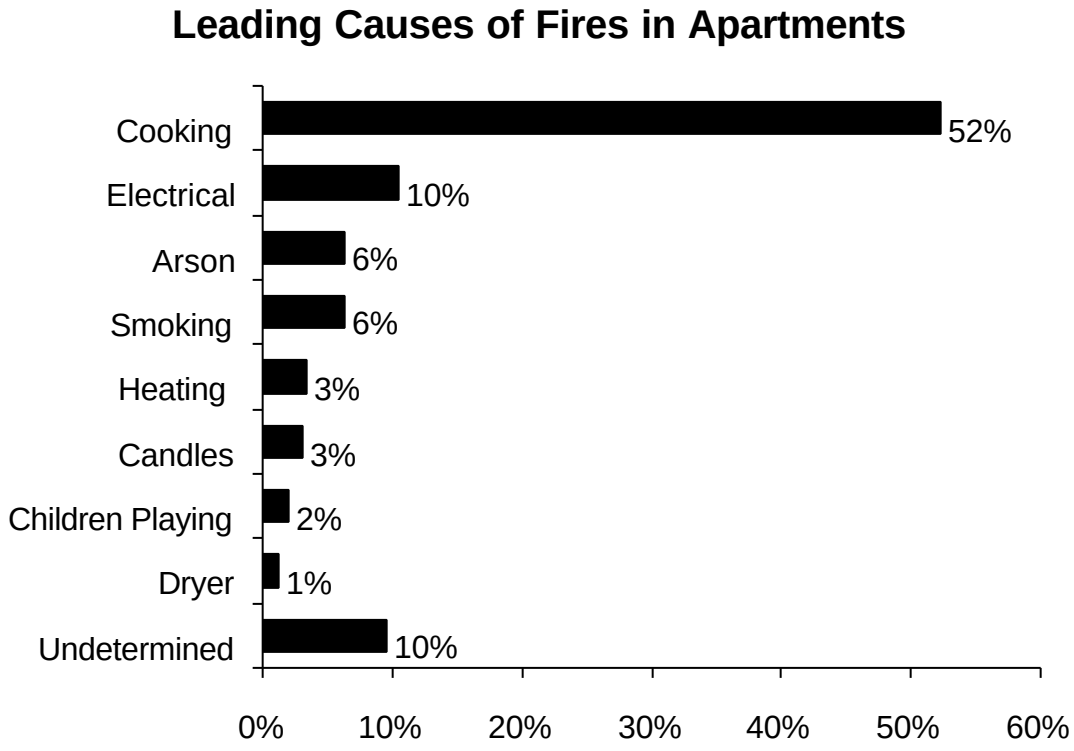
Detectors Required in All 1- and 2-Family Homes
Massachusetts General Law Chapter 148, Section 26E (a) requires owners of existing one- and two-family homes to install smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above. Section 26F requires the seller of existing one- and two- family homes to equip the structure with approved smoke detectors as provided in section 26E.

No Sprinklers Present in 99% of One- and Two-Family Structure Fires
Sprinklers were present and operated in less than one percent of the 3,445 one- and two-family residential structure fires in 2000 where sprinkler status was known. Less than 1% of the systems did not operate. In less than 1% of incidents, the fire was too small to activate the system. In 99% of the cases where sprinkler status was known, there was no sprinkler system. Six hundred and two (602) incidents were not classified. These were excluded from the percentage calculations.

Apartment Fires

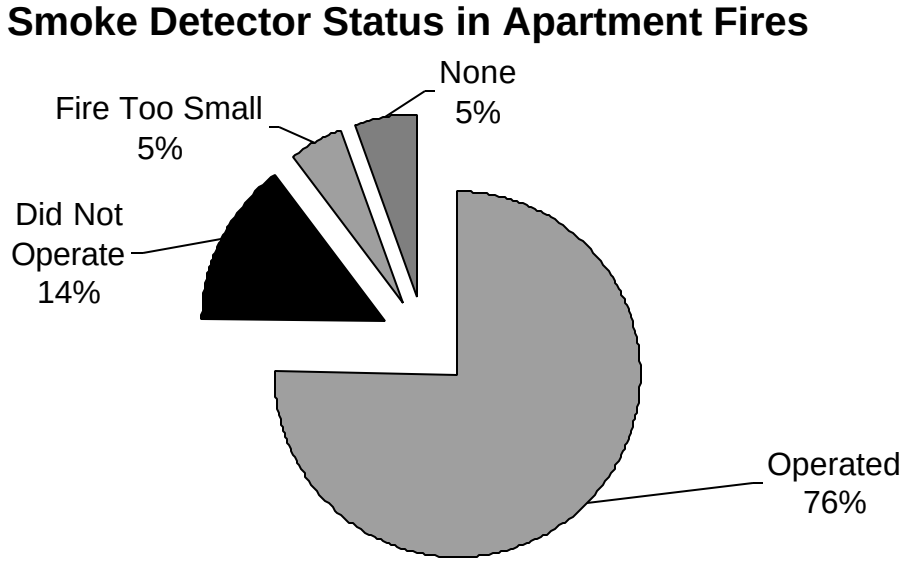
3,544 Fires, 18 Civilian Deaths, $38 Million in Damage
Three thousand five hundred forty-four (3,544), or 44%, of the Commonwealth's 8,005 residential structure fires occurred in apartments in 2000. These 3,544 fires caused 18 civilian deaths, 177 civilian injuries, 304 fire service injuries, and an estimated dollar loss of $38.4 million. The average dollar loss per fire was $10,836. Fires in apartments were down 11% from 3,691 in 1999.

Unsafe Cooking Caused 52% of Apartment Fires
Fifty-two percent (52%) of the fires in apartments were caused by unsafe cooking in 2000. Electrical problems caused 10% of the incidents. Arson caused 6% of the fires in apartments. The improper and unsafe use of smoking materials caused 6% of apartment fires. Heating accounted for 3% of apartment fires. Candles accounted for another 3% of apartment fires. Children playing with fire caused 2% of the fires in apartments. Dryer fires caused 1% of the fires in apartments. For 10% of apartment fires in 2000 the cause was not determined.



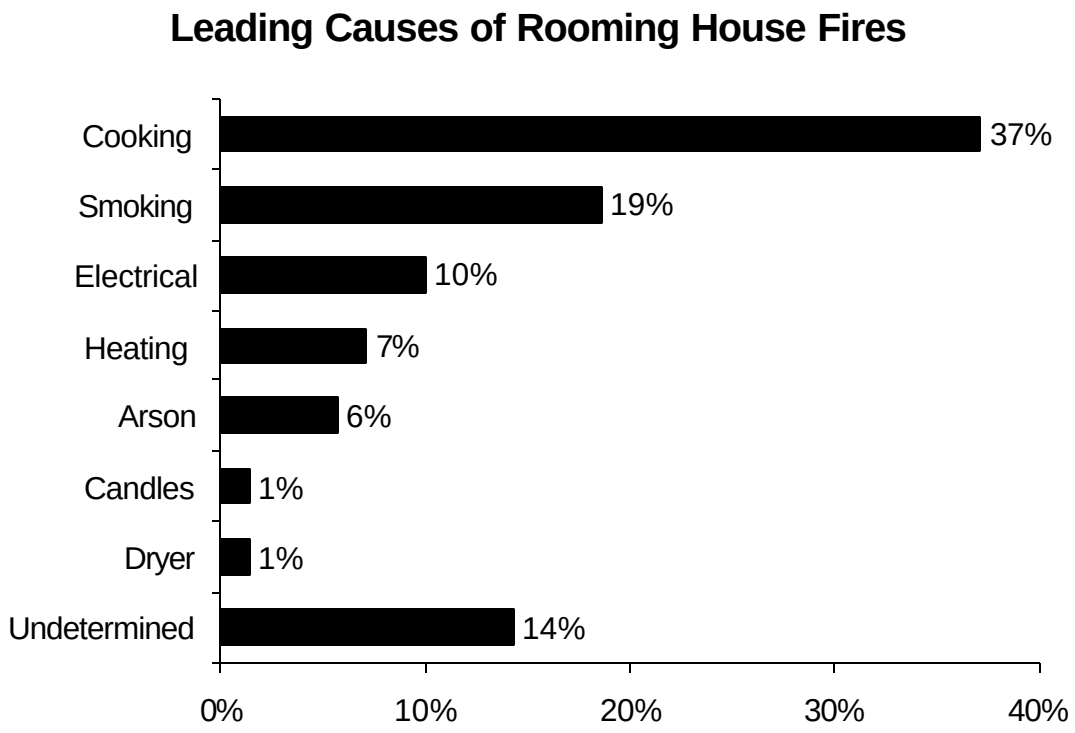
61% of Apartment Fires Start in the Kitchen
For apartment fires where area of origin is known, 61% of the fires started in the kitchen. Nine percent (9%) started in the bedroom; 4% started in the living room, and 3% started in the hallway or corridor. Area of origin was undetermined or not reported for 110 incidents. These incidents were excluded from the percentage calculations.

Detectors Sounded in 76% of Apartment Fires
Smoke or heat detectors were present and operated in 76%, of the 3,363 apartment building fires for which detector performance was known. Detectors were present but did not operate in 14% of these incidents. In 5%, the fire department reported that the fire was too small to trigger the detector. No detectors were present in 5% of the fires, which took place in an apartment. Smoke detector performance was not reported or not classified in 328 incidents. These fires were excluded from the percentage calculations.



Apartments with 6+ Units Must Have Hard-Wired Detectors
According to Massachusetts General Law Chapter 148, Section 26C, apartment houses containing six or more units must be equipped with hard-wired smoke detectors. Under MGL 148 Section 26E, in buildings of three to five dwelling units, the detectors may be hard-wired or monitor battery operated in the units themselves. Detectors in common hallways and basements must be hard-wired.

Sprinklers Present in Only 15% of Apartment Residential Structure Fires
Sprinklers were present and operated in 3% of the 2,309 apartment structure fires where sprinkler status was known in 2000. In only six of the fires, less than one percent (1%), the sprinkler system did not operate. In 12% of these incidents, the fire was too small to activate the system. In 85% of the cases, there were no sprinkler systems present or installed. In 1,235 incidents, sprinkler status was unknown. These fires were excluded from the percentage calculations.



Apartments Are More Likely to Have Sprinklers Installed
Apartments are more likely than single-family dwellings to have sprinklers installed. Newly constructed apartments are more likely to be required by building codes to have them installed. Also, apartments are likely to be found in high-rise buildings, which were required to be retrofitted with sprinklers by March, 1998. Since August, 1997, new apartment buildings or those undergoing major renovations with 3 or more units are required to have sprinkler systems. Sprinklers were present in 15% of apartment fires, but only 0.6% of fires in one- and two-family dwellings.

Rooming House Fires

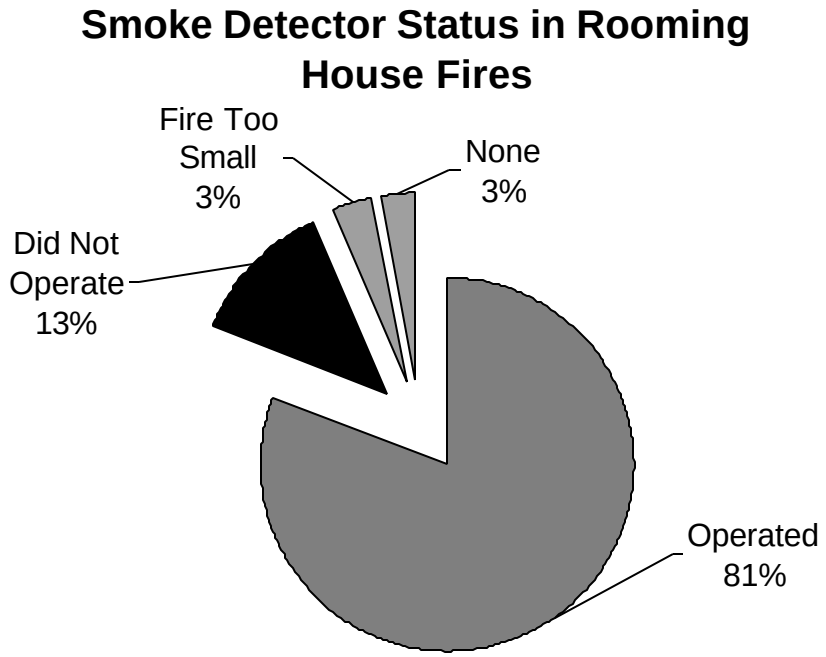
70 Fires, $236,943 in Damage
Seventy (70) rooming, lodging, and boarding house fires were reported to the Massachusetts Fire Incident Reporting System (MFIRS) in 2000. These 70 fires caused two civilian injuries, four firefighter injuries and an estimated $236,943 in damages. The average dollar loss per fire was $3,384. Slightly less than 1% of the 8,005 residential structure fires in 2000 occurred in rooming, boarding, or lodging houses. Fires in rooming houses were down 30% from 100 in 1999.

Cooking Caused Over 1/3 of Rooming House Fires
Of the 70 incidents in rooming houses, cooking caused 37%. The unsafe use and disposal of smoking materials was the next significant cause, igniting 19% of the rooming house fires. Electrical fires in rooming houses accounted for 10% of the incidents. Heating caused 7% of the fires in rooming houses. Arson was the fifth leading cause of the 70 incidents, causing 6%. Dryers and candles each accounted for 1% of these fires. Fourteen percent (14%) of the fires in rooming houses were undetermined.

41% of Rooming House Fires Start in the Kitchen
Forty-one percent (41%) of the fires started in the kitchen. Twenty-six percent (26%) started in the bedroom; 7% started in the heating equipment room; 4% started in the laundry room; and 3% started in each of the bathroom, crawl space and exterior wall surfaces. Area of origin was undetermined in one of the rooming house fires. This was excluded from the percentage calculations.

Detectors Sounded in Over 3/4 of Rooming House Fires
Smoke or heat detectors were present and operated in 81% of the 63 rooming house fires for which detector performance was known. Detectors were present but did not operate in 13% of these incidents. In 3% of incidents, the fire department reported that the fire was too small to trigger the detector. In another 3% of rooming house fires, there were no detectors present. Smoke detector performance was not reported or not classified in seven incidents. These fires were excluded from the percentage calculations.

Smoke detectors are now required in rooming houses. Local communities may elect to adopt the provisions of MGL Chapter 148, Section 26H. This law mandates an adequate system of automatic sprinklers in every lodging or boarding house in the community. Sprinklers must be installed within five years after the provision is accepted. This was enacted after 15 people died in a Beverly rooming house fire on July 4, 1984.

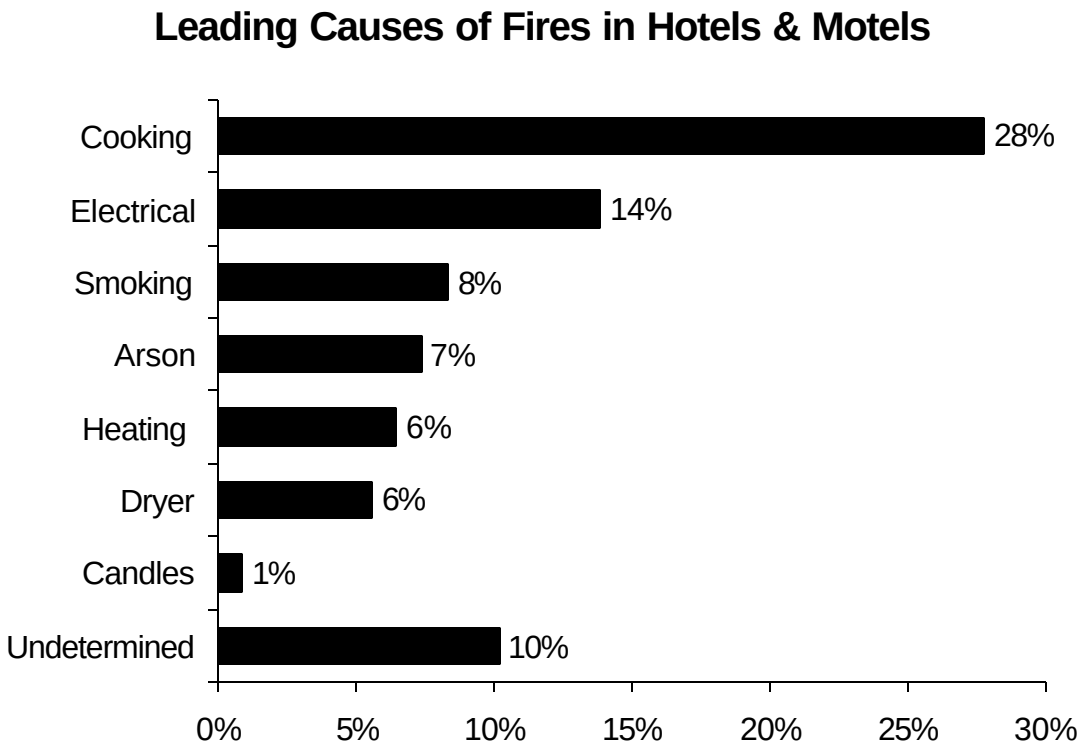


Sprinklers Present in 1/3 of Rooming House Fires
Sprinklers were present and operated in 15% of the rooming house structure fires in 2000 where sprinkler status was known. The fire was too small to activate the sprinklers in 29% of these fires. In 56% of the cases, there was no sprinkler system installed. Sprinkler status was unknown in 18 incidents.

Hotel and Motel Fires

108 Fires, 7 Civilian Injuries, 3 Fire Service Injuries, $1 Million in Damages
One hundred and eight (108) structure fires in hotels, motels and home hotels caused seven civilian injuries, three fire service injuries, and $1,010,760 in estimated property damage. The average dollar loss per fire was $9,359. In 2000, 1% of the 8,005 residential structure fires occurred in hotels, motels, or home hotels. Fires in hotels and motels were down 18% from 132 in 1999. There were no civilian fire deaths in Massachusetts hotels, motels or inns in 2000.

Cooking Caused Over 1/4 of Hotel & Motel Fires
Of the 108 fires in hotels and motels in 2000, cooking was the leading cause, accounting for 28% of the fires in this occupancy. Electrical problems were another significant cause, at 14%. Smoking materials ignited 8% of these fires. Arson accounted for 7% of hotel and motel fires in 2000. Heating accounted for 6%. Dryers caused another 6% of these fires. Candles accounted for 1% of fires in hotels and motels in 2000. Ten percent (10%) of the fires in this category went undetermined.



Almost 1/3 of Hotel and Motel Fires Start in the Kitchen
For hotel and motel fires where area of origin is known, 32%, or nearly one-third, of the fires started in the kitchen. Twelve percent (12%) of these fires began in the bedroom. Nine percent (9%) started in the laundry room; 7% started in the bathroom; 5% started in the hallway. The dining area, supply rooms and heating equipment rooms each accounted for 4% of the fires in 2000. There were six fires in hotels and motels where area of origin was unknown. These incidents were excluded from the percentage calculation.

Federal Hotel and Motel Fire Safety Act of 1990 Implemented in Massachusetts
The Federal Hotel and Motel Fire Safety Act of 1990 was implemented in Massachusetts in 1992. To increase the level of fire safety in hotels and motels, this act limits travel by federal employees to properties meeting certain fire safety standards. Each guestroom must be equipped with a hard-wired, single-station smoke detector installed in accordance with the National Fire Protection Association (NFPA) Standard 72. Hotels and motels over three stories in height must also be protected by an automatic sprinkler system installed in the sleeping area of each room in accordance with NFPA Standard 13 or 13R.

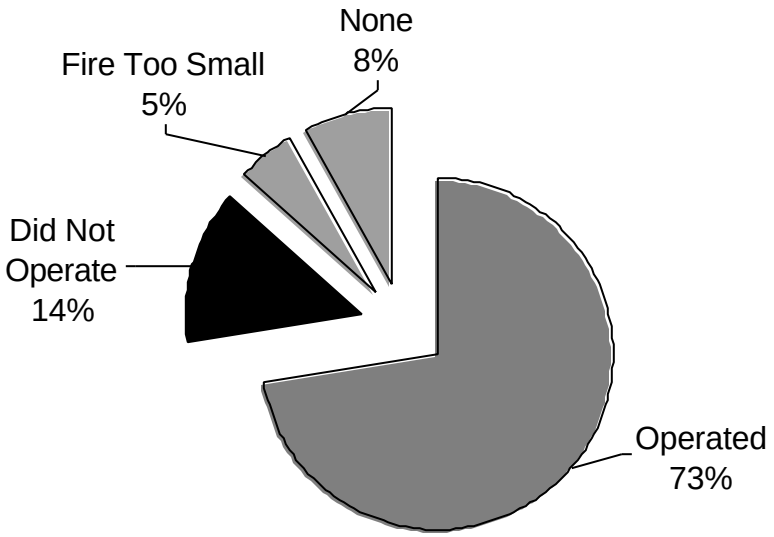
Only properties that meet the fire safety standards are listed in the Federal Travel Directory used by federal employees to select lodging while on official business.

The last provision of this act took effect on October 1, 1996. At that time, 90% of all travel nights by federal employees must be in 'approved accommodations.' The Congressional authors of the act have clarified the term 'place of public accommodation.' This term includes hotels and motels and all such meeting and sleeping facilities except those specifically exempted. Private conference centers are now included. Meetings funded wholly or in part by federal funds are subject to this requirement. For a list of certified hotels go to the U.S. Fire Administration's website at www.usfa.fema.gov/hotel.

State Regulations Require Quarterly Innholder Inspections
State regulations require local fire departments to conduct quarterly inspections of the premises specified in inn holder licenses.

Detectors Sounded in 73% of Hotel and Motel Fires
Smoke or heat detectors were present and operated in 73% of the 98 hotel and motel residential structure fires for which detector performance was known. Detectors were present but did not operate in 14% of these incidents. No detectors were present in 8% of the residential fires, which occurred in a hotel or motel. In 5% the fire department reported that the fire was too small to trigger the detector. Smoke detector performance was not reported or not classified in 10 incidents. These fires were excluded from the percentage calculations.

Smoke Detector Status in Hotel & Motel Fires



Sprinklers Absent in 45% of Hotel and Motel Structure Fires
Sprinklers were present and operated in 12% of the 73 hotel and motel structure fires in 2000 where sprinkler status was known. In 41% of incidents, the fire was too small to activate the system. In 45% of the cases, there was no sprinkler system. Sprinkler performance was not classified for 35 incidents.

Hotel-Motel Safety
It is important to consider fire safety when selecting accommodations.

- Choose lodging equipped with sprinklers and smoke detectors in each room.

- If you are hearing impaired, you may request a room with an appropriate smoke alarm.

- Think about fire safety when checking into a hotel or motel. Count the number of doors down the hall to the nearest fire exit staircase. Remember to never use the elevator in case of fire. Travelers should test the smoke detector in their room.

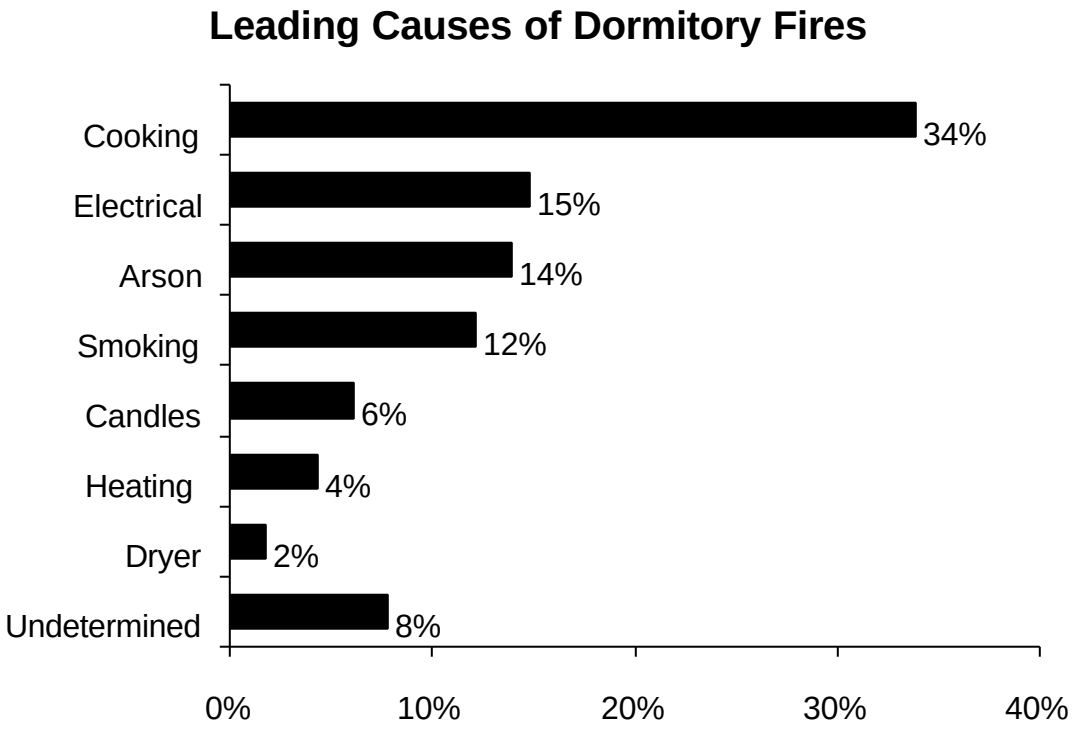
- It is recommended that you keep the room key, eyeglasses and a flashlight on the night table. If a fire occurs, take them with you and go out the door. Test the door with the back of your hand. If the door feels cool, open the door a crack. Be ready to close the door if hot air, flames, or smoke rush through the crack. If this does not occur, yet the hall is hazy with smoke, crawl down the hall counting the doors to the nearest stairway exit. If this exit cannot be reached, turn around and count the doors back to your room. Unlock the door and re-enter.

- If it is unsafe to leave the room during a fire: fill the tub with cold water; stuff wet towels around the door to keep the smoke out; if possible, open a window and hang a sheet outside to signal for help; cover your face with a wet cloth and stay low if smoke gets in the room; do not jump.

Dormitory Fires

115 Fires, 1 Civilian Death, 19 Civilian Injuries, $320,116 in Damages
One hundred fifteen (115) dormitory structure fires caused one civilian death, 19 civilian injuries, one fire service injury and an estimated dollar loss of $320,116 in damages. The one death was the suicide of an MIT student inside her room in a sorority house. The average dollar loss per fire was $2,784. In 2000, 1% of the 8,005 residential structure fires occurred in dormitories. Fires in dormitories were down 23% from 150 in 1999.

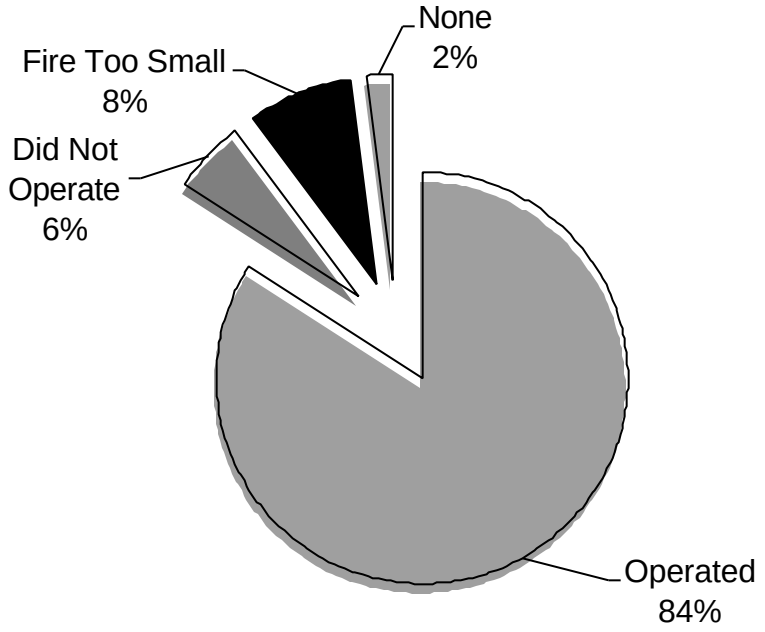
Cooking Accounted for Over 1/3 of Dormitory Fires
In the 115 incidents of dormitory fires, the leading cause was cooking, accounting for 34%. Fifteen percent (15%) of these incidents were caused by electrical problems. Arson accounted for 14% of the fires in dormitories. Smoking accounted for 12% of these fires. Candles caused 6% of the fires in dormitories. Heating caused 4% of these fires. Dryer fires were responsible for 2%. Eight percent (8%) of dormitory fires were undetermined.



40% of Dormitory Fires Start in the Kitchen
For dormitory fires where area of origin is known, 40% of the fires started in the kitchen. Sixteen percent (16%) began in the bedroom; 13% started in the hallway; 6% originated in the lavatory; 4% occurred in a lounge area, and 3% each in a machinery room and laundry room. There were three incidents where area of origin was unknown. These incidents were excluded from the percentage calculations.

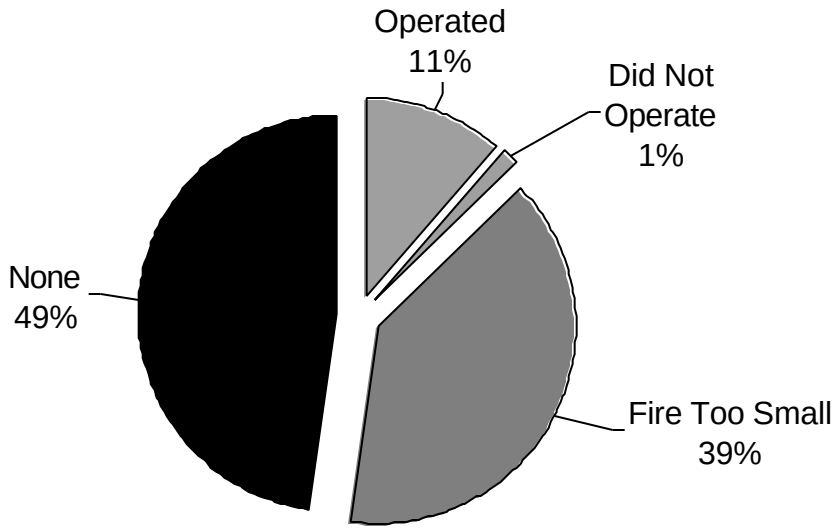
Detectors Sounded in 84% of Dormitory Fires
Smoke or heat detectors were present and operated in 84% of the 108 dormitory structure fires for which detector performance was known. Detectors were present but did not operate in 6% of these incidents. No detectors were present in 2% of the residential fires, which occurred in a dormitory. In 8% of incidents the fire department reported that the fire was too small to trigger the detector. Smoke detector performance was not reported or not classified in seven incidents. These fires were excluded from the percentage calculations.

Smoke Detector Status in Dormitory Fires



Sprinklers Present in Only 1/2 of Dormitory Residential Structure Fires
Sprinklers were present and operated in 11% of the 71 dormitory residential structure fires where sprinkler status was known. In 39% of these incidents, the fire was too small to activate the system. In 49%, or just under half of the cases, there was no sprinkler system. Forty-four (44) incidents were not classified. These percentages were calculated without these incidents.

Sprinkler Status in Dormitory Fires

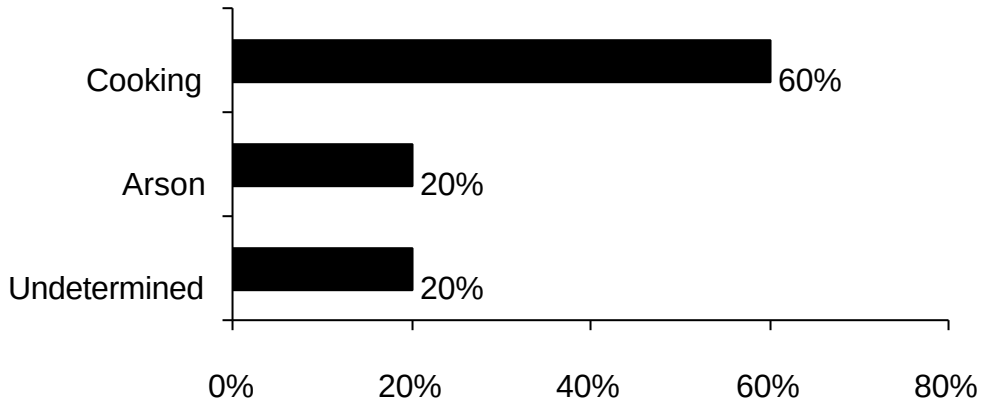


Home Hotel Fires

5 Fires, $1,400 in Damages
Five (5) home hotel structure fires caused an estimated dollar loss of $1,400 in damages. The average dollar loss per fire was $2,800. In 2000, 0.1% of the 8,005 residential structure fires occurred in dormitories. There were no reported fires in home hotels in 1999.

Cooking Accounted for 2/3 of Home Hotel Fires
In the five incidents of home hotel fires, the leading cause was cooking, accounting for

Leading Causes of Home Hotel Fires



three (3) incidents, or 60% of the fire incidents. Arson accounted for one incident, or 20% of the fires in home hotels. Twenty percent (20%) or one incident of home hotel fires was undetermined.

60% of Home Hotel Fires Start in the Kitchen
For home hotel fires where area of origin is known, 60% of the fires started in the kitchen. Twenty percent (20%) began in the bathroom; and another 20% began in the laundry room.

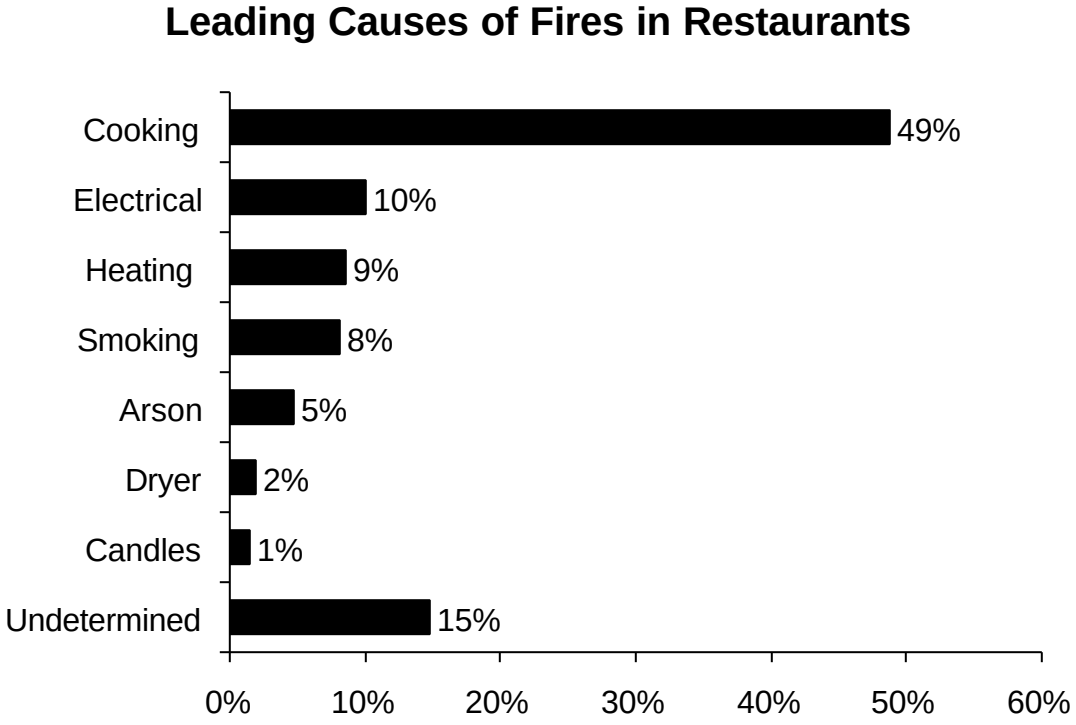
Detectors Sounded in 100% of Home Hotel Fires
Smoke or heat detectors were present and operated in 100% of the five home hotel structure fires.

Sprinklers Present in Only 60% of Home Hotel Residential Structure Fires
Sprinklers were present and operated in 40% of the five home hotel residential structure fires. In 20% of these incidents, the fire was too small to activate the system. In 40% there was no sprinkler system.

Restaurant Fires

209 Fires, 11 Firefighter Injuries, $3.2 Million in Damages
Two hundred and nine (209) structure fires in 2000 occurred in restaurants and other eating and drinking establishments, causing 11 firefighter injuries, and an estimated dollar loss of $3.2 million. The average dollar loss per fire was $15,599. In 2000, 2% of the 10,279 structure fires in Massachusetts occurred in restaurants. Fires in restaurants were down 13% from 241 in 1999.

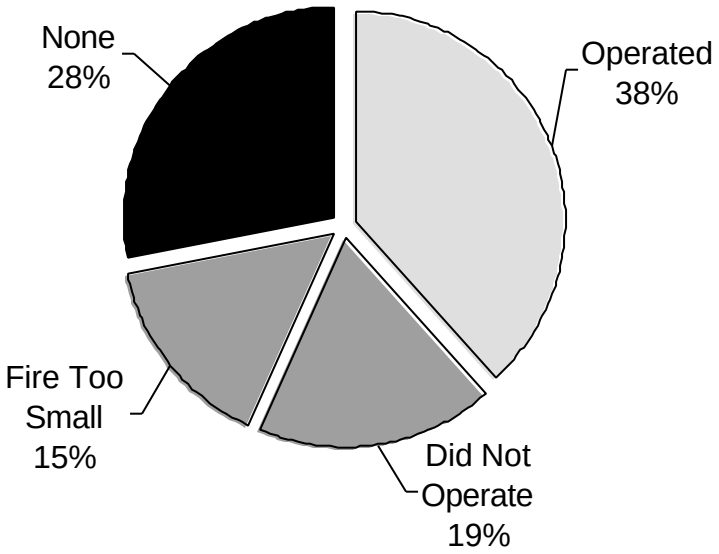
Almost 1/2 of Restaurant Fires Caused by Cooking
Unattended cooking and unsafe cooking practices caused 49% of the restaurant fires; electrical problems caused 10% of these fires; heating equipment caused 9%; 8% of the fires were caused by unsafe use of smoking materials; 5% were considered incendiary or suspicious; dryer fires were responsible for 2%, and candles were the cause of 1% of the fires in restaurants in 2000. Fifteen percent (15%) of the fires in restaurants were undetermined.



Over 1/2 of Restaurant Fires Started in the Kitchen
Fifty-five percent (55%) of the fires in restaurants, where area of origin was known, started in the kitchen. Three percent (3%) of the fires began on an exterior wall surface; 3% of the fires started in the dining area; another 3% started in the ductwork, and 3% of the fires in restaurants originated in the bathroom. Six of the restaurant fires had an unknown area of origin; these were excluded from the percentage calculations.

Detectors Operated in 38% of Restaurant Fires; None Present in 28%
Smoke or heat detectors were present and operated in 38% of the 178 restaurant fires where detector performance was known. Detectors were present, but did not operate in 19% of these fires. In 15% of the incidents the fire was too small to activate the detector. No smoke detectors were present in 28% of the restaurant fires. Detector performance was unknown or not classified in 31 fires in eating and drinking establishments. These fires were excluded from the analysis. Restaurants are not required by law to have smoke and/or heat detectors present. However, many if not all have some form of fire alarm system.

Smoke Detector Status in Restaurant Fires



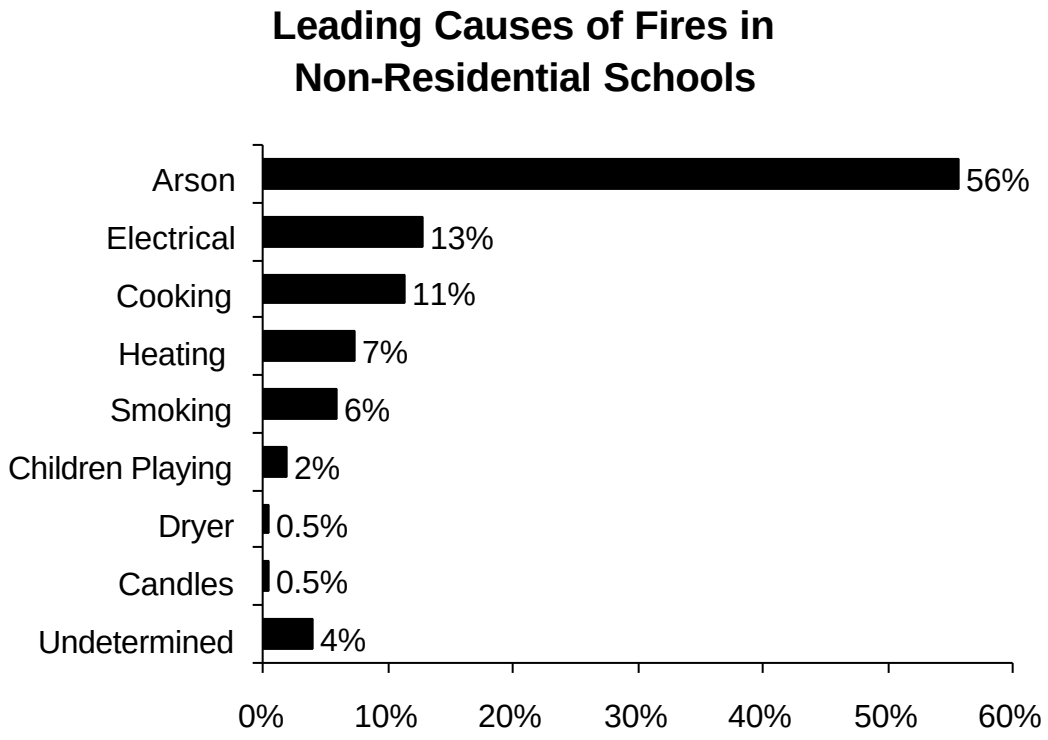
No Sprinklers in Almost 2/3 of Restaurant Fires
Sprinklers were present and operated in 9% of the 161 restaurant fires where sprinkler status was known. In 2% of these fires, sprinkler equipment was present but did not operate. In 27% of these fires, the fire was too small to activate the sprinkler. No sprinkler equipment was present in 62% of the restaurant fires in 2000. Sprinkler status was unknown in 48 incidents. These incidents were excluded from the percentage calculations.

Non-Residential School Fires

203 Fires Caused 16 Civilian Injuries and $1 Million in Damages
Two hundred and three (203) structure fires in non-residential schools caused 16 civilian injuries, eight firefighter injuries and $1.2 million in property damages. The average dollar loss per fire was $5,963. In 2000, 2% of the structure fires occurred in non-residential schools. Fires in non-residential schools were up 26% from 161 in 1999.

Over 1/2 of Non-Residential School Fires Considered Arson
Fifty-six percent (56%) of the 203 non-residential school fires were considered incendiary or suspicious. Electrical problems

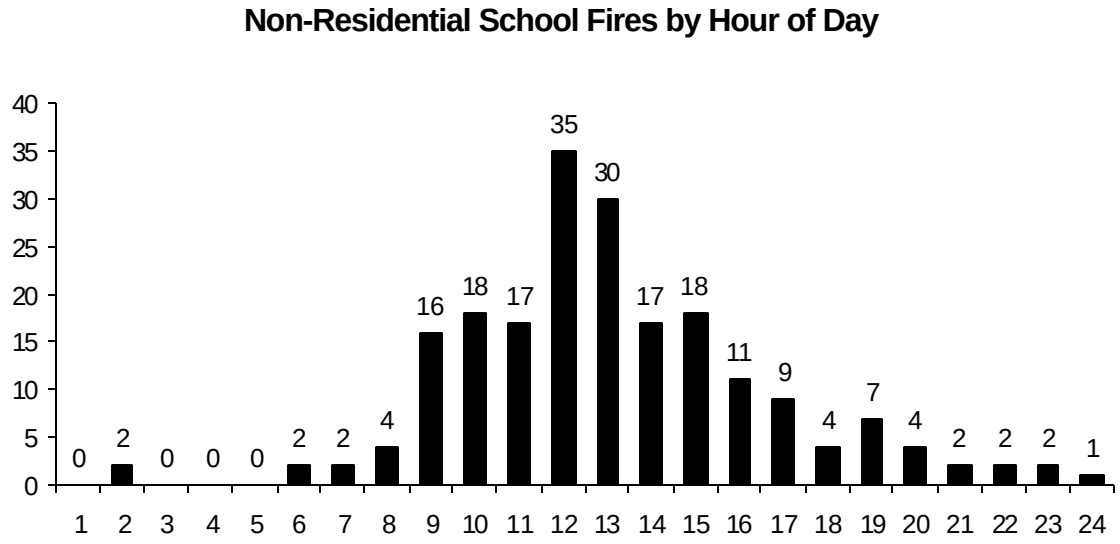
caused 13% of these fires. Cooking started 11% of the fires in schools in 2000. Problems with heating equipment accounted for 7% of these fires. The unsafe use and improper disposal of smoking materials caused 6% of the fires in non-residential schools. Two percent (2%) of fires in non-residential schools were attributed to children playing with fire. Dryer fires and candles were each responsible for less than one percent (0.5%) of these incidents. Four percent (4%) of the fires in non-residential schools were undetermined.



Over 1/3 of Non-Residential School Fires Started in Bathrooms
Thirty-seven percent (37%) of the fires in non-residential schools started in lavatories, locker rooms or cloak rooms; 15% began in hallways or corridors; 11% started in kitchens; 7% started in small assembly areas, and 2% each started in heating equipment rooms or areas, interior stairways and switchgear areas or transformer vaults. There were nine incidents where area of origin was undetermined. These incidents were excluded from the percentage calculations.

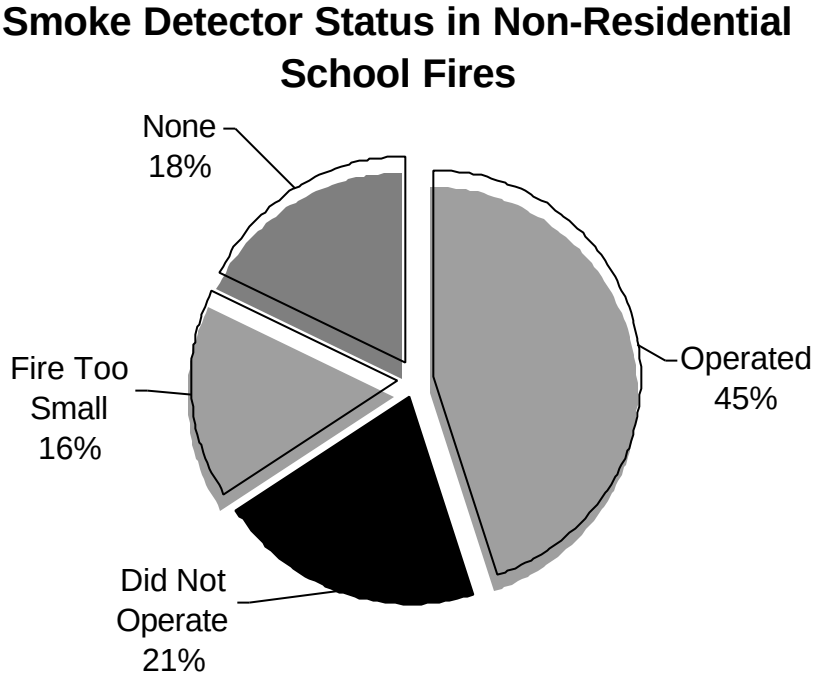
Most School Fires Occur When School is in Session - During Lunch
School fires generally occur during the school day. Eighty-four percent (84%) of the non-residential school structure fires occurred during the eight hours between 8:00 a.m. and 4:00 p.m. with a sharp increase between 12:00 p.m. and 1:00 p.m. The following graph shows the hour of alarm on the 24-hour clock. Midnight to 1:00 a.m. is represented by 1; 1:01 a.m. to 2:00 a.m. is represented by 2, etc. Ninety-five percent (95%) of these fires occurred between Monday and Friday. It seems likely that many of the incendiary and

suspicious fires were set by the students themselves. This could account for a number of the fires of undetermined cause as well.



Detectors Operated in 45% of Non-Residential School Fires

Smoke detectors were present and operated in 45% of the 185 non-residential school fires where detector performance was known. Detectors were present but did not operate in 21% of these fires. The fire was too small to activate the detector in 16% of the fires in non-residential schools. No detectors were present in 18% of these fires. Detector performance was unknown in 18 of the fires in non-residential schools. These fires were excluded from the analysis. Non-residential schools are not required by law to have smoke or heat detectors. However, many if not all have some form of fire alarm system.



No Sprinklers in 2/3 of Fires in Non-Residential Schools

Sprinklers were present and operated in 1% of the 139 fires in non-residential schools where sprinkler performance was known. Thirty-two percent (32%) of these fires were too small to trigger the sprinkler. Sprinklers were present but did not operate in 1% of these fires. In 65% of the fires in non-residential schools, there were no sprinkler systems. Sprinkler performance was unknown in 64 fires in non-residential schools. These incidents were excluded from analysis.

Schools Must Hold Fire Drills Four Times a Year

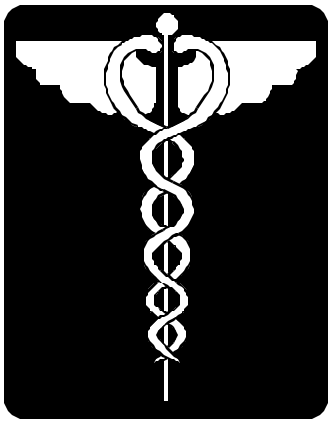
Effective fire prevention has undoubtedly contributed to the low injury rate at school fires. According to 527 CMR 10.09, fire drills must be conducted four times a year. The fire department must approve an evacuation plan developed by someone from the school system. All teachers must receive instructions about the plan. Students must be advised of the fire drill procedure or take part in a fire drill within three days after entering school.

North Star Charter School had Largest Loss School Fire

- On March 23, 2000 at 1:42 p.m. the Springfield Fire Department was called to a fire at the North Star Charter School intentionally set in the stage area of the auditorium. This blaze was the largest loss fire in this category of structure fires, with an estimated $750,000 worth of damage done. Luckily, no civilians were injured. Three firefighters were injured battling this blaze. The presence of smoke or heat detectors was undetermined. It was reported that there were no sprinklers.

Fires in Hospitals

90 Fires Caused 2 Civilian and 5 Firefighter Injuries
Ninety (90) structure fires in hospitals caused two civilian injuries, five firefighter injuries and an estimated dollar loss of $435,443. The average loss per fire was $4,838. In 2000, less than 1% of the 10,279 structure fires occurred in hospitals. Fires in hospitals were up 7% from 84 in 1999.



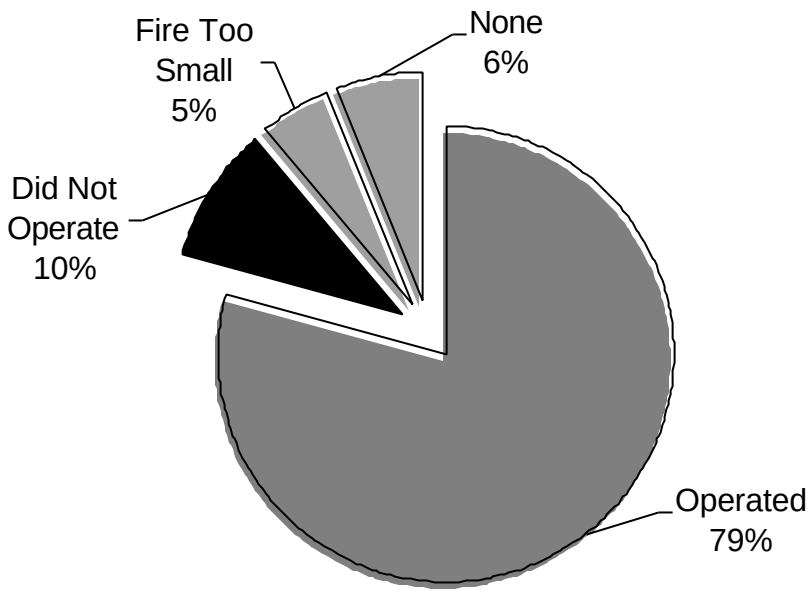
Cooking Caused Over 1/3 of Hospital Fires
Unattended cooking and other unsafe cooking practices caused 39% of the fires in hospitals in 2000. Electrical problems initiated 22% of the fires; arson accounted for 9% of the fires in hospitals; 6% were caused by dryer fires; the unsafe use of smoking materials accounted for 3% of these fires, and heating equipment and children playing with fire each accounted for 1% of the fires in hospitals in 2000.

Over 1/3 of Hospital Fires Began in the Kitchen
Where area of origin was known, 37% of the fires in hospitals started in the kitchen; 7% occurred in a lavatory, locker room or cloakroom; another 7% began in lounge areas; 6% occurred in laundry areas; 5% began in patient rooms; and 5% of fires in hospitals started in laboratories. Area of origin was undetermined in four of the fires in hospitals.

Detectors Operated in Over 3/4 of Hospital Fires
Smoke detectors were present and operated in 79% of the 82 fires in hospitals where detector performance was known. In 10% of incidents, the detectors were present but did not operate. The fire was too small in 5% of these incidents. In 6% of the fires in hospitals, there were no detectors present at all.

Smoke detector status was unknown in eight of the fires in hospitals. These incidents were excluded from the analysis.

Smoke Detector Status in Hospital Fires



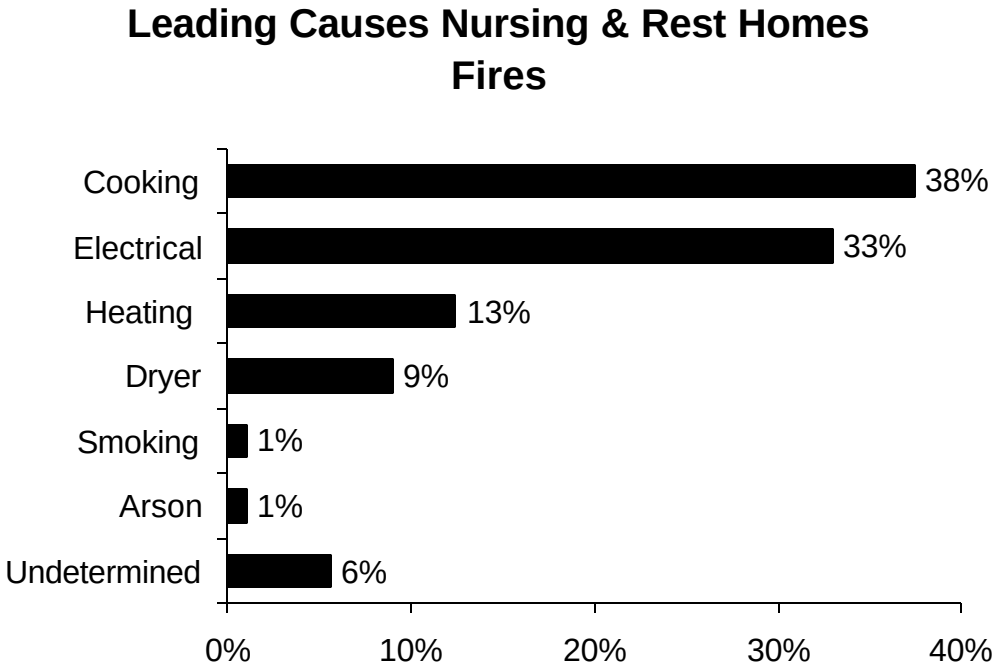
Fire Too Small for 77% of These Fires
Sprinklers were present and operated in 6% of the 62 hospital fires where sprinkler status was known. The fire was too small to activate the sprinkler in 77% of these fires. Sixteen percent (16%) of the hospital fires had no sprinkler systems. Sprinkler performance was unknown in 28 of the fires in hospital facilities. These incidents were excluded from this analysis.

Careless Smoking Caused Largest Hospital Fire in 2000
- On November 26, 2000 at 10:09 p.m. the Boston Fire Department was called to a fire at the Boston Medical Center when carelessly discarded smoking materials in a bedroom caused an estimated $100,000 in property loss. Smoke alarms operated, but the sprinkler system did not because the fire was too small for its activation. There were no injuries reported at this fire.

Nursing and Rest Home Fires

88 Fires Caused 3 Fire Service Injuries and $56,012 in Damages
Eighty-eight (88) structure fires occurred in nursing homes and rest homes during 2000. These fires caused three fire service injuries and an estimated dollar loss of $56,012. There were no civilian injuries in fires at Massachusetts nursing or rest homes in 2000. The average loss per fire was $637. In 2000, less than one percent (0.9%) of the 10,279 structure fires occurred in nursing homes and rest homes. Fires in nursing homes and rest homes were down 5% from 93 in 1999.

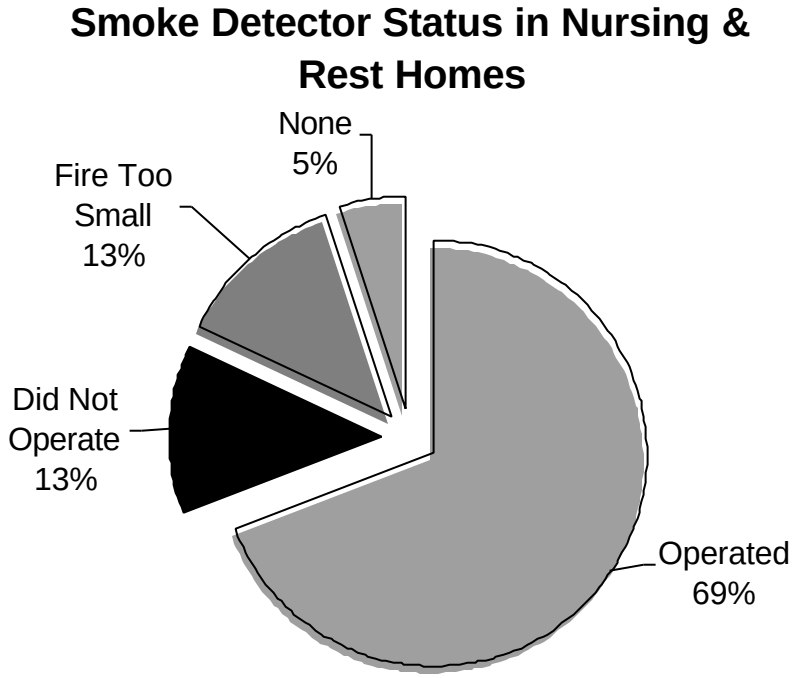
Cooking, Electrical, and Heating Leading Causes of Nursing Home Fires
Unattended cooking and other unsafe cooking practices caused 38% of the fires in nursing and rest homes. Electrical problems caused 33% of these fires. Heating equipment was involved in 13% of these incidents. Dryers were involved with 9% of these fires. Improper use of smoking materials caused another 1% of nursing home fires. Arson accounted for another 1% of these fires. Six percent (6%) of the fires in nursing or rest homes were undetermined.



Nearly 1/2 of Fires Began in the Kitchen
Forty-four percent (44%) of the fires began in the kitchen. Seventeen percent (17%) of the fires in nursing homes started in laundry rooms; 8% began in the patient rooms. Fires occurring in patient rooms were most commonly smoking fires or electrical fires. Five percent (5%) occurred in lavatories, locker rooms, or coatrooms; 4% originated in the

dining area. Area of origin was undetermined for four incidents. They were excluded from the percentage calculations.

Detectors Operated in Over 2/3 of Nursing Home Fires
Smoke detectors were present and operated in 69% of the 78 fires in nursing and rest homes where detector performance was known. Detectors were present but did not operate in 13% of these fires. Thirteen percent (13%) of these fires were too small to activate the detector. No detectors were present in 5% of the fires in nursing and rest homes. Smoke detector performance was unknown in ten of the fires in nursing or rest homes. These incidents were excluded from the analysis.



Fire Too Small to Activate Sprinkler in 3/4 of Nursing Home Fires
Sprinklers were present and operated in 4% of the 73 fires in nursing homes and rest homes where sprinkler performance was known. Sprinklers were present but did not operate in 1% of these fires. In 75% of the fires in nursing and rest homes, the fire was too small to activate the sprinkler. No sprinkler systems were present in 19% of these fires. In 15 of these incidents, sprinkler performance was not known. These fires were excluded from the analysis.

Electrical Short Circuit Causes Largest Loss Nursing Home Fire

- On Saturday, February 12, 2000 at 9:12 a.m. the Holyoke Fire Department was called to a fire in a nursing home caused by a short circuit from mechanical damage to the heating unit in a patient's room. This fire caused $100,000 in property damage. Smoke alarms operated, but the sprinkler system did not operate because the fire was too small for its activation. There were no injuries reported at this fire.

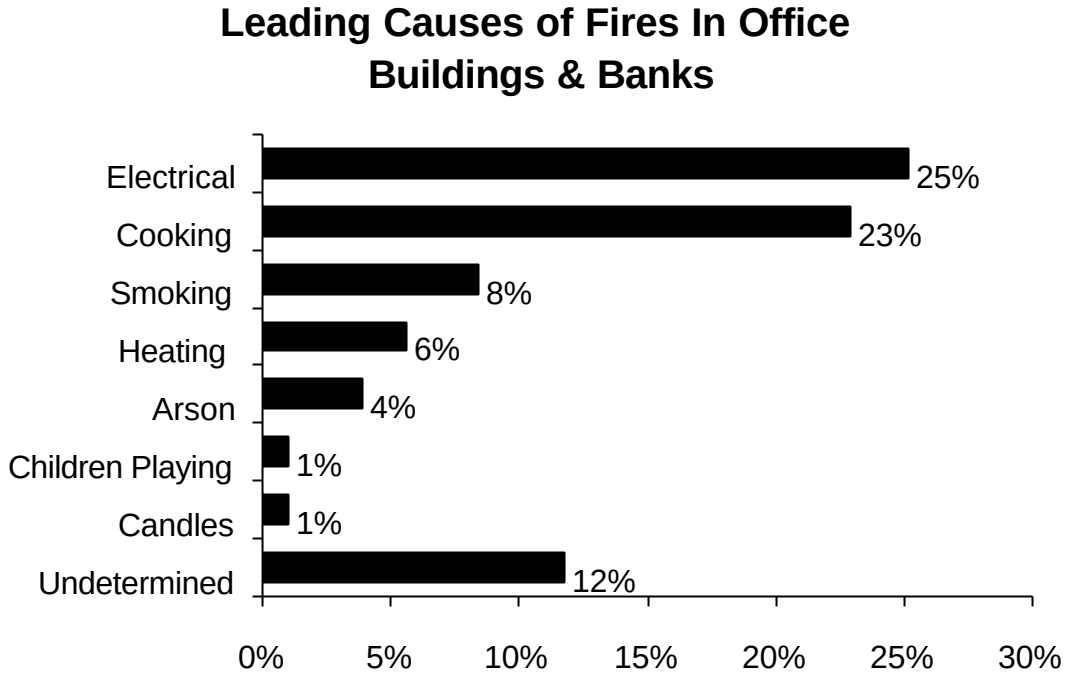
Office Building and Bank Fires

179 Fires, 5 Civilian Deaths, $25.5 Million in Damages

One hundred seventy-nine (179) structure fires occurred in offices and banks during 2000. These fires caused five civilian deaths, 10 firefighter injuries, four civilian injuries, and an estimated dollar loss of $25,592,343 million. The average dollar loss per fire was $142,974. However the February fire in a Newton office building had estimated damages of $21 million itself. In 2000, 2% of the 10,279 structure fires occurred in offices and banks. Fires in office buildings and banks were up 6% from 169 in 1999.

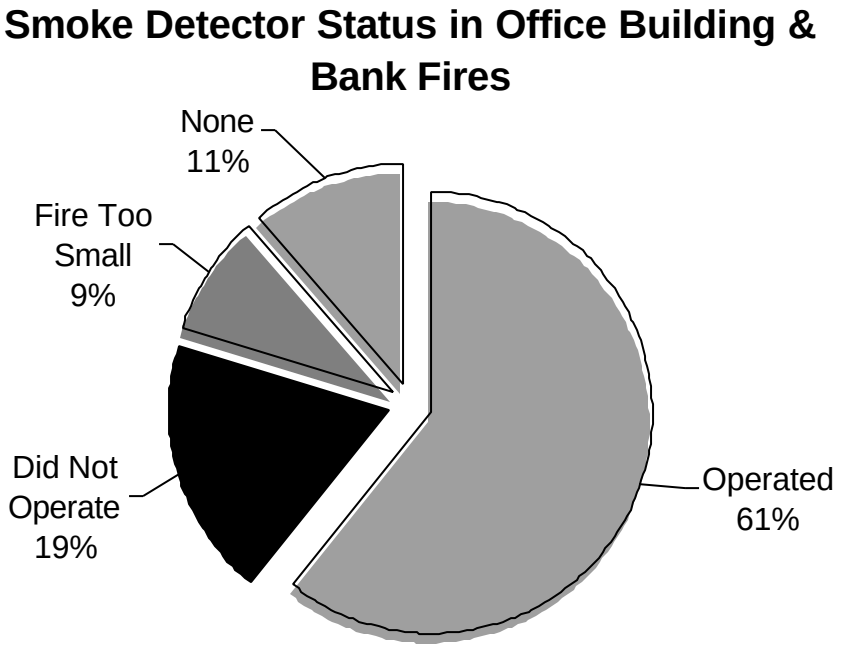
Electrical Problems Caused 1/4 of Office & Bank Fires

Electrical problems caused 25% of the 179 fires in office buildings and banks in 2000. Unattended cooking and other unsafe cooking practices caused 23%; smoking materials ignited 8%; 6% were caused by heating equipment; 4% of the fires in offices and banks were considered arson, and candles and children playing with fire were each responsible for 1% of these fires in 2000. Twelve percent (12%) of the fires in office building and banks in 2000 were undetermined.



Almost 1/4 of Office Building and Bank Fires Started in Kitchen
Of the fires in office buildings and banks where area of origin was known, 23% started in the kitchen. Ten percent (10%) of these fires began in an office; 8% originated in a crawl space or substructure space; 7% began in the machinery room; 4% started in the hallway; 4% occurred in supply areas and another 4% started in heating equipment areas. Area of origin was unknown in nine fires and were subsequently excluded from the percentage calculation.

Detectors Failed to Operate in Over 19% of Office Building and Bank Fires
Smoke detectors were present and operated in 61% of the 158 fires in office buildings and banks where smoke detector performance was known. Detectors were present but did not operate in 19% of these fires. In 9%, the fire was too small to activate the detector. Eleven percent (11%) of fires in office buildings or banks did not have any smoke detectors. Detector performance was not known in 21 office building and bank fires. These incidents were excluded from the analysis.



Almost 1/2 of Office Building and Banks Had No Sprinklers
No sprinklers were installed in 42% of the 113 fires occurring in office buildings and banks where sprinkler performance was known. In 48% of these incidents, the fire was too small to activate the sprinkler. Sprinklers operated in only 10%, of these incidents. Sprinkler performance was not known in 66, or 37% of the total number of office building and bank fires. These incidents were excluded from the analysis.

Vacant Building Fires

44% of Vacant Building Fires Considered Arson

Seventy-three (73) structure fires occurred in buildings that were vacant, under construction or demolition, (Fixed Property Use coded 910-919.) These 73 fires caused 24 firefighter injuries and an estimated $2.5 million in damages. The average dollar loss per vacant building fire was $34,538. Thirty-two (32), or 44% of the fires in vacant buildings were considered arson. These 32 fires caused eight firefighter injuries and $313,851 in damages. In 2000, 4% of the 747 Massachusetts structure arson fires occurred in vacant buildings. Fires in vacant buildings were down 32% from 108 in 1999.

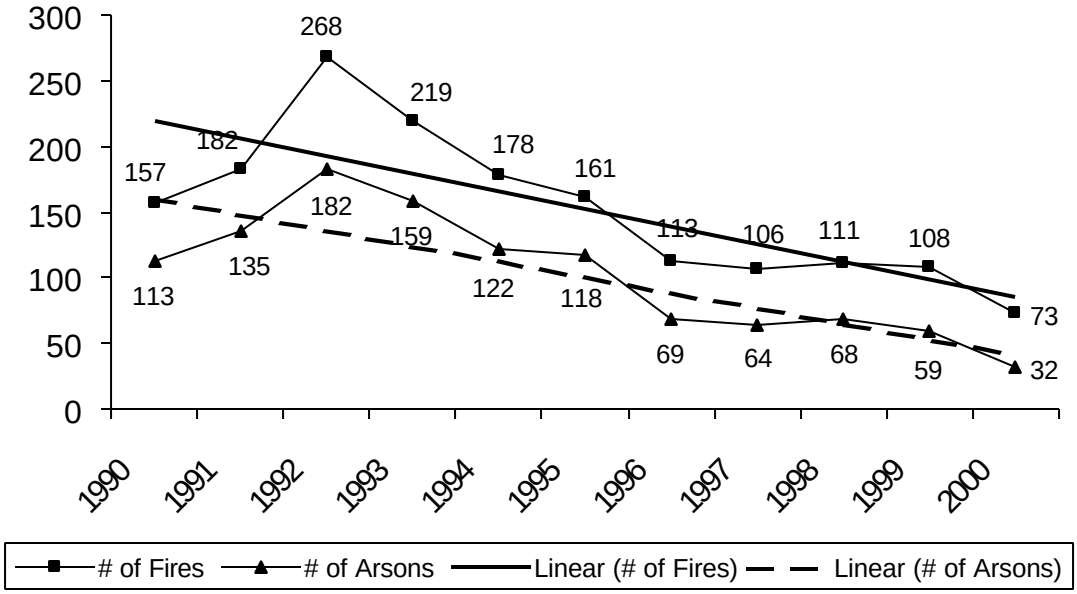
The following table and chart illustrate the trend in vacant building fires and arsons: they are steadily declining each year. It should be noted that these statistics, except for 1998, do not include incidents from the Boston Fire Department. Data from the BFIRS system loses the capability to identify vacant buildings during conversion to MFIRS. Therefore, the numbers in the table should be considered to be underestimated.

FIRES AND ARSONS IN VACANT BUILDINGS

Year	# of Fires	# of Arsons	% Arsons
1990	157	113	72%
1991	182	135	74%
1992	268	182	68%
1993	219	159	73%
1994	178	122	69%
1995	161	118	73%
1996	113	69	61%
1997	106	64	60%
1998	111	68	61%
1999	108	59	55%
2000	73	32	44%

The following graph clearly shows this downward trend in both vacant building fires and vacant building arsons.

Vacant Building Fires & Arsons by Year



Vacant Buildings Threaten Communities
Vacant buildings pose a serious threat to the surrounding community. They become targets for vandalism. Children may find them attractive play spaces. Drug users or dealers may utilize the space for their activities. The homeless may seek shelter and set fires to keep warm. Arsonists who enjoy fires may consider these buildings to be available for their use and entertainment. All of these activities threaten the safety of the neighborhood and surrounding homes.

When the sprinkler systems are present, they should be maintained. If the head of the fire department decides to grant a request under MGL Chapter 148, Section 27A to disconnect the system, extra precautions should be taken. Removing furniture, contents and debris from the interior of the building, insisting that all openings to the building are securely boarded up, preferably from the inside, and periodic security checks can reduce the risk of fire in any vacant building and the inherent risk to firefighters called to fight a vacant building fire.

The City of Worcester has taken the lead. Since the tragic death of six of its own firefighters on December 3, 1999 at the vacant Worcester Cold Storage Warehouse. The city has marked vacant buildings with large placards for firefighters and other public safety personnel. These placards identify vacant buildings and either warn personnel to proceed with extreme caution when entering these buildings or that the building is off limits and a defensive, exterior attack is recommended.

These local efforts led to statewide action. In December, 2000, the Board of Fire Prevention Regulations passed an emergency amendment requiring a simple, statewide

system of marking vacant building. The marking system requires a joint inspection by fire and building officials to determine whether or not it is safe for firefighters to conduct an interior attack. The Board of Building Regulations Standards (BBRS) passed a parallel emergency amendment to its regulations in December, 2000, on the inspection and marking of vacant buildings. Most importantly though, the BBRS passed an emergency amendment requiring vacant buildings be boarded up using the so-called HUD method. This method is the most effective known and is difficult for vandals to penetrate. This is a major step forward in the war on arson.

Largest Loss Vacant Building Fire in Rowe

- On Wednesday, January 26, 2000 at 8:16 p.m. the Rowe Fire Department was called to a 7-alarm fire in a vacant building undergoing renovation. The fire began in one of the large open rooms. The cause of the fire was undetermined. There were no injuries associated with this fire. Smoke detectors and sprinklers were not present. Damages from this blaze were estimated to be $1,400,000.

- On Saturday, July 8, 2000 at 12:02 p.m. the Springfield Fire Department was called to a fire to a vacant three-story building under renovation, the old Union Station. The cause of the fire was undetermined. Smoke detectors and sprinklers were not present. Thirteen firefighters were injured fighting this fire. There was no estimation as the dollar loss incurred by this fire.

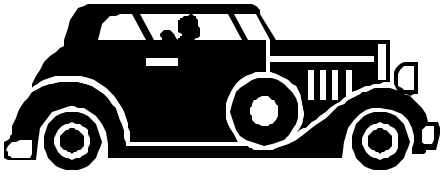
- On Saturday, July 29, 2000 at 5:05 p.m. the Lawrence Fire Department was called to an arson in a vacant apartment building. This suspicious fire began in the living room. There were no injuries sustained in this fire. Smoke detectors and sprinklers were not present. Damages from this blaze were estimated to be $80,000.

- On Sunday, November 12, 2000 at 10:06 p.m. the Worcester Fire Department was called to a vacant three-story residential property. The fire began in the lobby. The fire was ruled to be incendiary. Three firefighters were injured fighting this fire. Smoke detectors and sprinklers were not present. Damages from this arson were estimated to be $10,000.

Motor Vehicle Fires

5,473 Motor Vehicle Fires Account for Over 1/5 of Reported Fires

The 5,473 motor vehicle fires accounted for 13, or 16%, of civilian fire deaths, 34 civilian injuries, 33 fire service injuries, and an estimated property damage of $20.6 million. Motor vehicle fires accounted for 22% of total reported fire incidents. The 5,473 fires in 2000 are a 9% drop from the 6,011 motor vehicle fires in 1999.



According to MFIRS, a motor vehicle fire is defined as any fire involving a car, truck, boat, airplane, construction equipment or other mobile property that occurs outside of a structure.

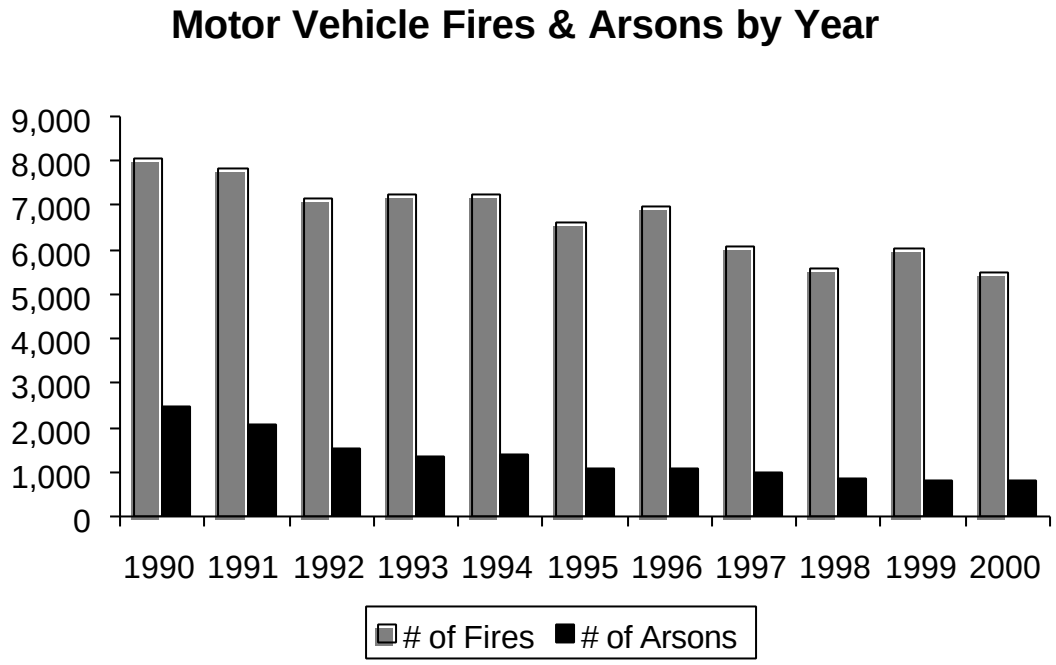
The Burned Motor Vehicle Reporting Law

The Massachusetts Fire Incident Reporting System identified motor vehicle fires and motor vehicle arson as a major problem in 1985. The Burned Motor Vehicle Reporting Law took effect in August of 1987. The law requires owners of burned motor vehicles to personally appear at fire headquarters in the community where the fire occurred to complete a report. The table below shows the effectiveness of this law. Since the law took effect in 1987, motor vehicle arsons have decreased 84% from a high of 5,116 in 1987 to 798 in 2000. The percentage of motor vehicle fires that are arsons has also dropped 52% in the past decade from 30.6% in 1990 to 14.6% in 2000.

VEHICLE FIRES AND VEHICLE ARSONS BY YEAR

Year	# of Fires	# of Arsons	% Arsons
2000	5,473	798	14.6%
1999	6,011	818	13.6%
1998	5,565	836	15.0%
1997	6,096	979	16.1%
1996	6,980	1,082	15.5%
1995	6,612	1,093	16.5%
1994	7,267	1,395	19.2%
1993	7,234	1,329	18.4%
1992	7,160	1,543	21.6%
1991	7,808	2,084	26.7%
1990	8,056	2,463	30.6%

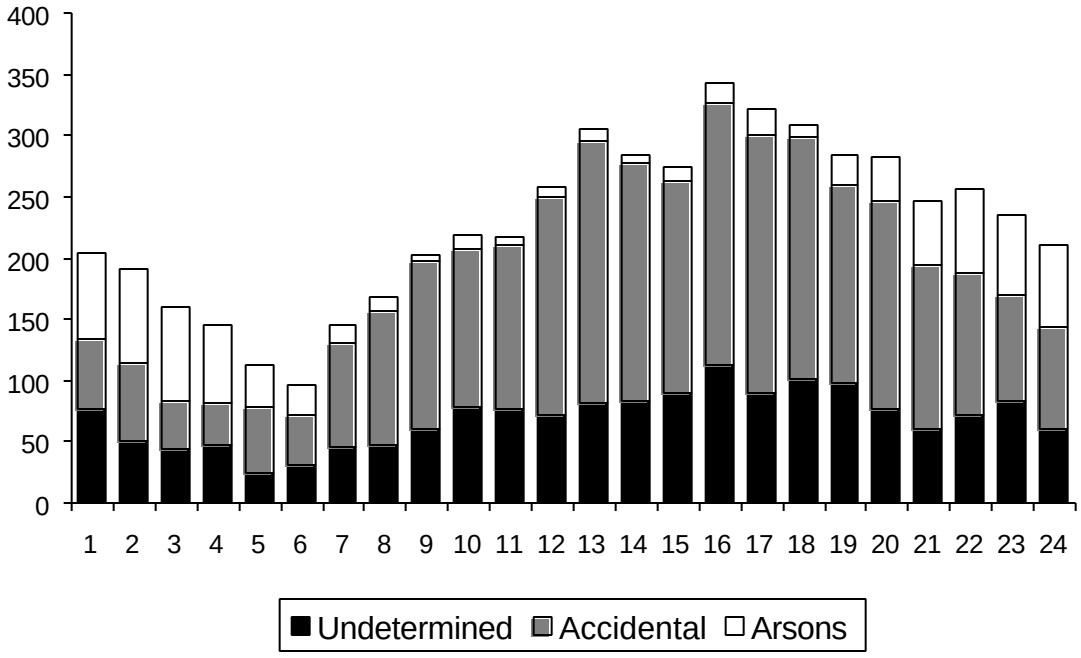
The following graph illustrates the data in the table.



Mechanical Failures Caused 42% of Massachusetts Motor Vehicle Fires
Of the 5,473 motor vehicle fires in 2000, 42% were caused by some type of mechanical failure or malfunction; 14.6% were considered incendiary or suspicious and 13% resulted from other accidental causes. The cause was undetermined or not reported in 30% of the motor vehicle fires.

Accidental Fires Occur During Day and Early Evening, Vehicle Arson in Darkness
Motor vehicle fires of different causes occur at different times of the day. As the graph shows, accidental or unintentional fires are more common during the day and early evening. Incendiary and suspicious fires are generally set in darkness. The graph below shows fire frequency by time of day on the 24-hour clock for the causes of motor vehicle fires. Midnight to 1:00 a.m. is represented by 1; 1:01 a.m. to 2:00 a.m. is represented by 2, etc.

Causes of Motor Vehicle Fires by Time of Day



3/4 of Massachusetts Motor Vehicle Fires Involved Automobiles
Automobiles and vans accounted for 74% of the 5,473 motor vehicle fires, 5% were trucks weighing less than one ton and 3% were trucks weighing more than one ton.

Car Fire Safety Tips
Regular maintenance is the best way to prevent car fires. Leaking gasoline, oil and hydraulic fluids can catch fire. Electrical problems can cause short circuits and heat build-up leading to ignition of various motor vehicle components. A properly operating catalytic converter can reach 1,100° F. It can get even hotter if the car has worked hard or needs a tune-up. If other parts come in contact with it, they can ignite. Catalytic converters on parked cars will sometimes ignite a pile of leaves or dried grass underneath.

What should you do if you have a car fire?

1. Pull over to the side of the road and stop as soon as possible. Park the car, set the parking brake and put it in gear. Fire can disable a car's electrical system in seconds. Power steering and brakes will be harder to use than normal.
2. Turn off the ignition. You want to make sure no more gasoline is pumped to the fire.
3. Get everyone out of the car.
4. Move away and call 911. Do not open the hood. You risk being burned and giving the fire more oxygen.

Unless you're trained, let firefighters handle it. They wear protective clothing and are trained to handle pressurized systems, exploding bumpers, etc. Chemicals in the fire extinguisher can be compacted. To be effective, they must be used correctly. You don't want to practice in a panic situation.

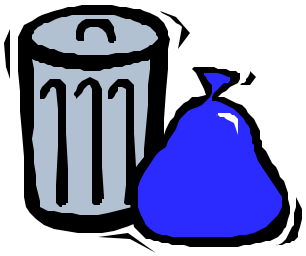
Gas Station Safety

- Turn off your car when you get gas. At self-service stations, remember to put the nozzle back and your gas cap on before driving off.
- Gasoline vapors burn at a very low temperature. These fumes are heavier than air, and can travel a distance to find a spark. Keep anything that could provide heat to start a fire away from gasoline. A spark or a lit cigarette is enough to ignite the invisible fumes that may linger on clothing.
- If you need to carry or store gasoline, use an approved container. Make sure it is in a secured, upright position away from passenger areas, and that the fill and vent openings are tightly closed. At home, always store these containers in safe secure areas – outside of living areas – away from ignition sources such as pilot lights.

Outside and Other Fires

9,179 Explosions and Brush, Trash, Outside Fires Reported in 2000

The 9,179 outside and other fires caused three civilian deaths, 62 civilian injuries, 44 fire service injuries, and an estimated dollar loss of $13.3 million. The 4,067 trees, grass and brush fires, 2,799 trash fires, 884 outside of structure fires, 152 explosions, 86 outside spills or leaks with ensuing fires, and 1,191 other fires accounted for 37% of the total fire incidents in 2000. These fires were down 26% from the 12,370 incidents reported in 1999. Fire departments are required to report any fire resulting in a dollar loss or human casualty to MFIRS. Fires that do not result in a loss may be reported. Many fire departments, particularly those that submit data electronically, voluntarily report these fires. These figures should be considered an underestimate of the "no loss" fire incidents to which fire departments actually responded.



The 9,179 reported outside and other fires include:

- 4,067 trees, grass, and brush fires, which caused 26 firefighter injuries, 11 civilian injuries, and an estimated dollar loss of $179,481; this is a 37% drop from the 6,668 incidents reported in 1999;
- 2,799 trash fires which caused two fire service injuries, four civilian injuries and an estimated dollar loss of $228,348; this is a 9% drop from the 3,069 incidents reported in 1999;
- 884 outside of structure fires which caused 11 fire service injuries, five civilian injuries, and an estimated dollar loss of $9,832,175; this is an 18% drop from the 1,077 incidents reported in 1999;
- 152 explosions which caused one civilian death, 14 civilian injuries, and an estimated dollar loss of $70,205; this is an 8% drop from the 162 incidents reported in 1999;
- 86 outside spills or leaks with an ensuing fire which caused four civilian injuries and an estimated dollar loss of $63,833; this is a 2% drop from the 88 incidents reported in 1999;
- 1,191 other fires which could not be classified further which caused two civilian deaths, 24 civilian injuries, five fire service injuries, and an estimated dollar loss of $2,995,202; this is a 9% drop from the 1,306 incidents reported in 1999.

Large Loss Outside and Other Fires

- On Saturday, March 18, 2000 at 8:55 p.m. the Boston Fire Department was called to a fire at a Boston Edison electric generating plant. The fire started in the switchgear area and began when water caused a short circuit. Smoke and heat detector performance was undetermined, as was sprinkler performance. Damages from this fire were estimated to be $4 million. There were no injuries resulting from this fire.

  On Sunday, March 19, 2000 at 1:53 a.m. the Boston Fire Department was called to another fire at a Boston Edison electric generating plant. The fire began in the switchgear area and was started when water caused a short circuit. Smoke and heat detector performance was undetermined, as was sprinkler performance. Damages from this fire were also estimated to be $4 million. There were no injuries resulting from this fire. These fires were two separate incidents that coincidentally happened within five hours of each other.

- On Monday, October 2, 2000 at 4:33 p.m. the Ludlow Fire Department was called to a fire at the Massachusetts Municipal Wholesale Electric Company's electric generating plant. The fire started in the switchgear area from an unspecified short circuit. The original call came in as an explosion and fire in the main switchyard. Upon arrival the incident commander immediately called for a second alarm. Suppression efforts were kept to keeping exposures cool and maintaining the perimeter around the main transformer. Units from the fire department remained on scene for approximately 21 hours. The regional HazMat team monitored air quality. The main transformer was a total loss and estimates to replace it were believed to be $2 million. There were no injuries associated with this fire.

Most Injuries From Outside and Other Fires

- On Saturday, April 8, 2000 at 2:34 p.m. the Ware Fire Department was called to a brush fire. High winds hampered firefighting efforts. Surrounding towns provided mutual aid for this fire that took 38 firefighters 12 hours to put out. Three firefighters were injured. There was no estimation as to the dollar loss incurred by this fire.

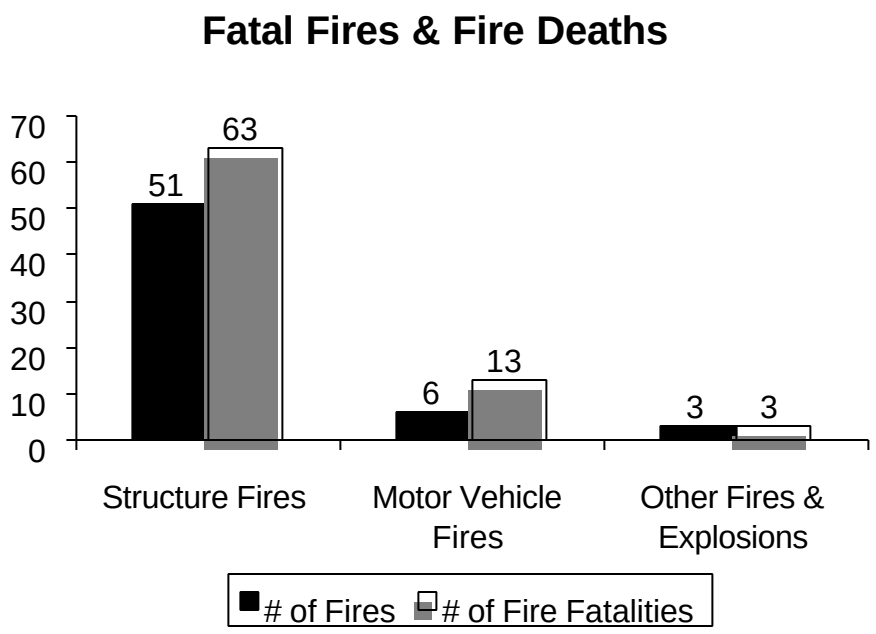
- On Friday, September 1, 2000 at 11:00 a.m. the New Bedford Fire Department was called to an explosion with no after-fire on a barge located in the harbor. The workers on the barge had been performing seismic work under the direction of the Army Corps of Engineers. Explosive charges were being used to send signals to seismic equipment, thereby mapping the harbor floor. During an unscheduled test to ensure the continuity of the wiring, a charge onboard the barge also exploded. The explosion self-extinguished. Three members of the crew were injured. There was no estimation as to the dollar loss incurred by this fire. Members of the Office of the State Fire Marshal's code compliance unit and explosives safety manager investigated this incident. Violations were discovered and the explosives license of the company causing the incident was rescinded.

2000 Massachusetts Fire Deaths

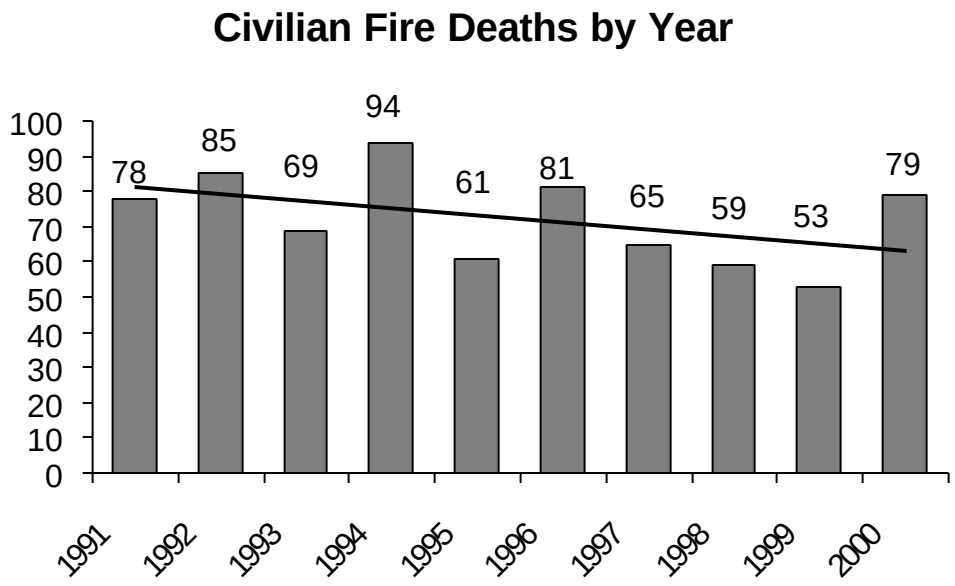
Civilian Fire Deaths

79 Civilians Died in Massachusetts Fires
Seventy-nine (79) civilians died in 60 Massachusetts fires during 2000. Sixty-three (63) civilians died in 51 structure fires. Thirteen (13) people died in six motor vehicle fires. Three (3) people died in three outside and other fires in 2000. In 2000, there were 12.4 fire deaths per one million population in Massachusetts up from 8.8 fire deaths per one million population in 1999.

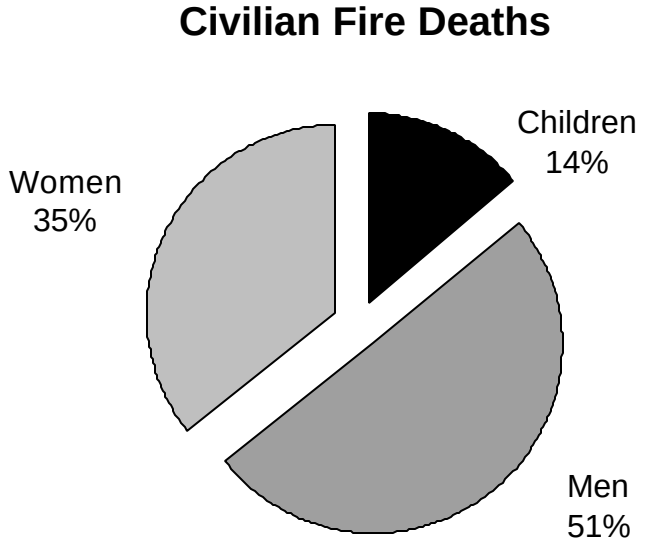
There were no fire service fatalities in the Commonwealth of Massachusetts in 2000.



Fire Deaths Were Up 49% From Previous Year
In 2000 fire deaths rose by 26, or 49%, from the previous year. In 1999, an all-time low of 53 deaths, the lowest number of deaths since the end of World War II according to available data was recorded. The following chart shows the trend of civilian fire deaths for the past decade on a steady decline. The average number of deaths per year for the past decade was 72. The average number of deaths per year for the five-year period 1991-1995 was 77. The average number of deaths from 1996-2000 was 67. The 79 fire deaths in 2000 are 18% above that 5-year average. Therefore, 79 fire deaths while slightly above the 10-year average is not necessarily outside of that pattern.

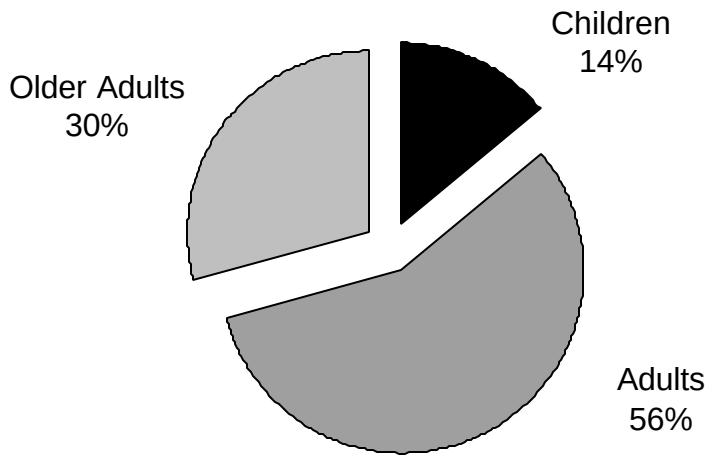


40 Men, 28 Women and 11 Children under 18 Died from Fires in 2000
Of the 79 fire deaths, 40, or 51%, were men, 28, or 35%, were women and 11, or 14%, were children under 18.



Twenty-three (23), or 30%, of the civilian fatal fire victims were over 65 years of age. This included 12 elderly men and 11 elderly women. Eleven, or 14%, were under the age of 18. Forty-four (45), or 56%, were adults between 18 and 65 years of age.

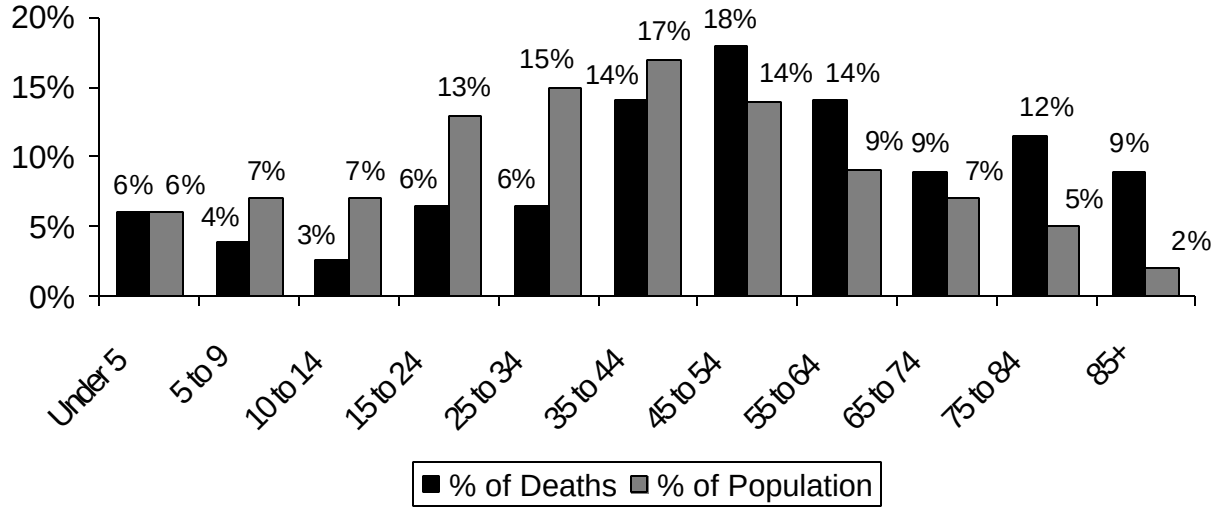
Civilian Fire Deaths by Age



Older Adults at Great Risk for Fire Death

Older adults (>65) account for 14% of the population but 30% of the fire deaths. The risk of fire death for older adults is 2.1, down from 2.3 last year. The following graph shows the percentage of fire deaths versus population percentage by age groups in 2000. If the percentage of deaths in a given age bracket is greater than its population, that group is at a high risk for fire death. People ages 10 to 14 had the lowest risk of fire deaths in 2000. Older adults, especially those over the age of 85 had the greatest risk of dying in a fire.

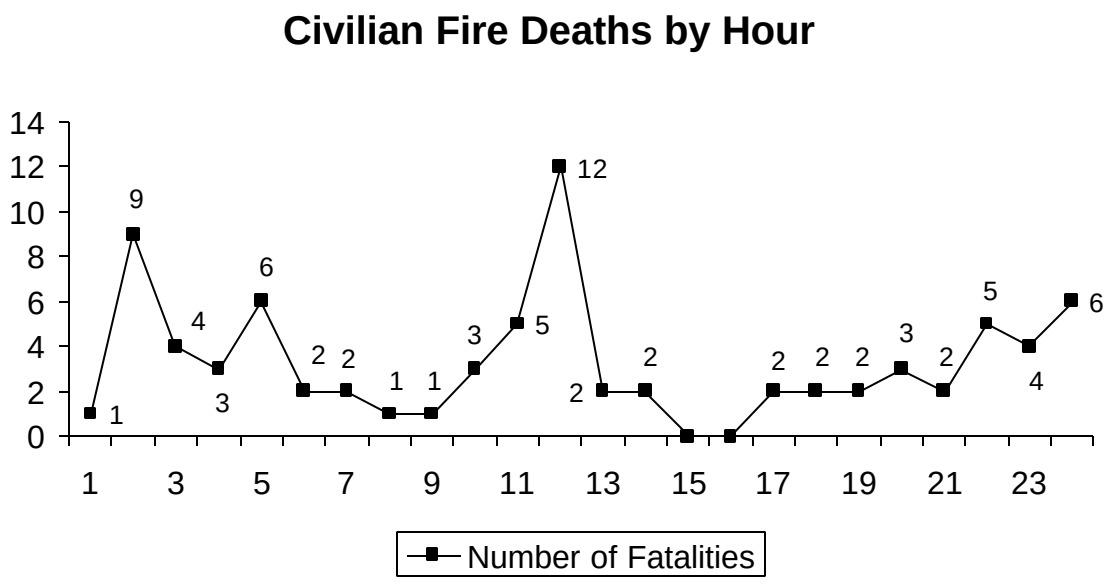
Deaths vs. Population Percentages



The percentages of the population in each age group were calculated using data from the 2000 Census from the U.S. Census Bureau.

Children under five years old accounted for 6% of the fire deaths and 6% of the population in 2000. Children between the ages of five and nine accounted for 4% of the fire deaths; children ages 10 to 14 accounted for 3%; young adults ages 15 to 24 accounted for 6%; adults between the ages of 15 and 24 accounted for 6% of the fire deaths; people ages 25 to 34 accounted for another 6%; adults between the ages of 35 and 44 were 14% of the fire fatalities; people ages 45 to 54 were 18%; victims between the ages of 55 to 64 accounted for 14%; and older adults over the age of 65 accounted for 30% of the fire fatalities in Massachusetts in 2000.

Over 1/2 of the Fire Victims Died in Fires between 10:00 p.m. and 7:00 a.m.
People were more likely to die in fires that occurred while they slept. Forty-two (42), or 54%, of the fire victims died in fires that occurred between 10:00 p.m. and 7:00 a.m. The graph below shows the fire death frequency by time of day on the 24-hour clock. Midnight to 1:00 a.m. is represented by 1; 1:01 a.m. to 2:00 a.m. is represented by 2, etc.



The importance of having working smoke alarms is clearly demonstrated here. If one-half of the fatal fire victims died during normal hours of sleep, a working smoke alarm could have wakened them and given them the time they needed to escape.

The five civilian fatalities in the Newton office building fire on February 9, 2000 contributed to the spike of 12 deaths during the noon hour.

STRUCTURE FIRE DEATHS

In 2000, there were 63 structure fire deaths in 51 fatal fires. For the second time since 1994, not all of the structure fire deaths occurred in residential occupancies. One fatal fire occurred in a general office building, one occurred in a residential parking garage and one occurred in a detached tool shed.

5 Structure Fire Deaths Occurred in an Office Building

- On February 9, 2000 at 12:08 p.m. the Newton Fire Department was called to a multiple fatal fire in anoffice building of undetermined cause. There were five victims, three men, ages 50, 51 and 60, and two women, ages 55 and 76. All five were overcome by heat and smoke while escaping and died from burns and smoke inhalation. There were four firefighter injuries and one other civilian injury associated with this fire. Damages from this fire were estimated at $21 million. Fire service personnel made eight rescues from the building. Smoke detectors were present and operating only in the recently renovated restaurant on the first floor. The building was not sprinklered.

Man Killed by Smoking Materials Igniting Flammable Vapors in Tool Shed

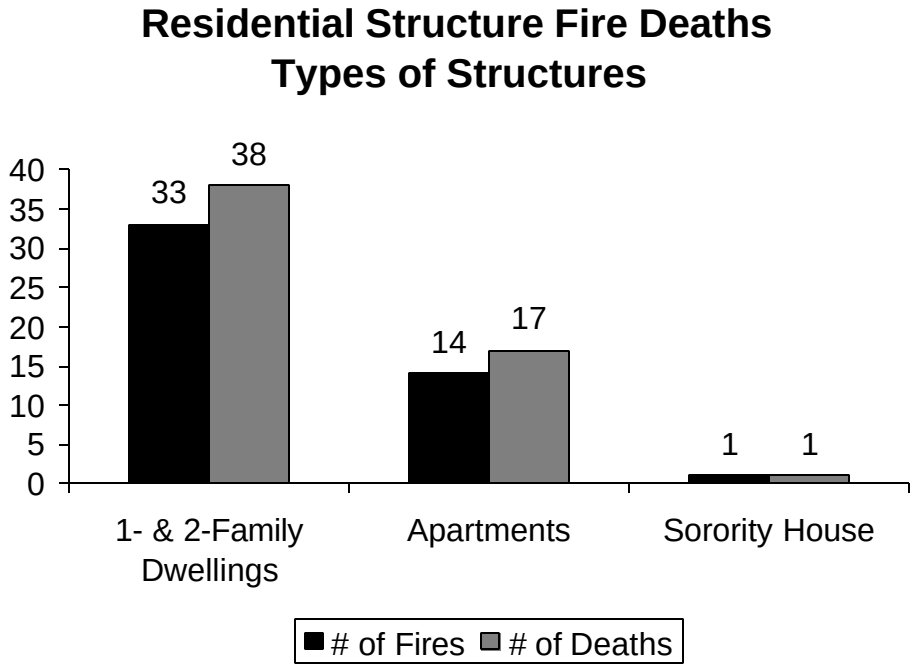
- On October 2, 2000 at 11:56 a.m. the Yarmouth Fire Department was called to a fatal structure fire in a detached tool shed. Scene investigation revealed that the victim had been working on a lawn mower and that the most probable cause of ignition was that his smoking materials ignited flammable vapors. There were numerous containers of flammable materials and flammable gas that burned and several containers succumbed to a boiling liquid expansion explosion (BLEVE) during the fire. The victim was found in a semi-seated position with obvious fatal burns. The 52-year old male was most likely killed in the initial explosion. The fire spread to the rear of the victim's house. No detectors were present in the tool shed. Total estimated damages from this blaze were $10,000.

One Killed in Misuse of Gasoline in Garage

- On September 3, 2000 at 12:11 p.m. the Boston Fire Department was called to a fatal fire in a residential parking garage. The victim, a 34-year old male, was most likely refueling his lawnmower while it was still hot from previous use. The gasoline ignited, quickly blocking the victim's only means of escape. The victim died from smoke inhalation. Smoke detectors were not present in the garage. Damages from this fire were estimated at $60,000.

RESIDENTIAL STRUCTURE FIRE DEATHS

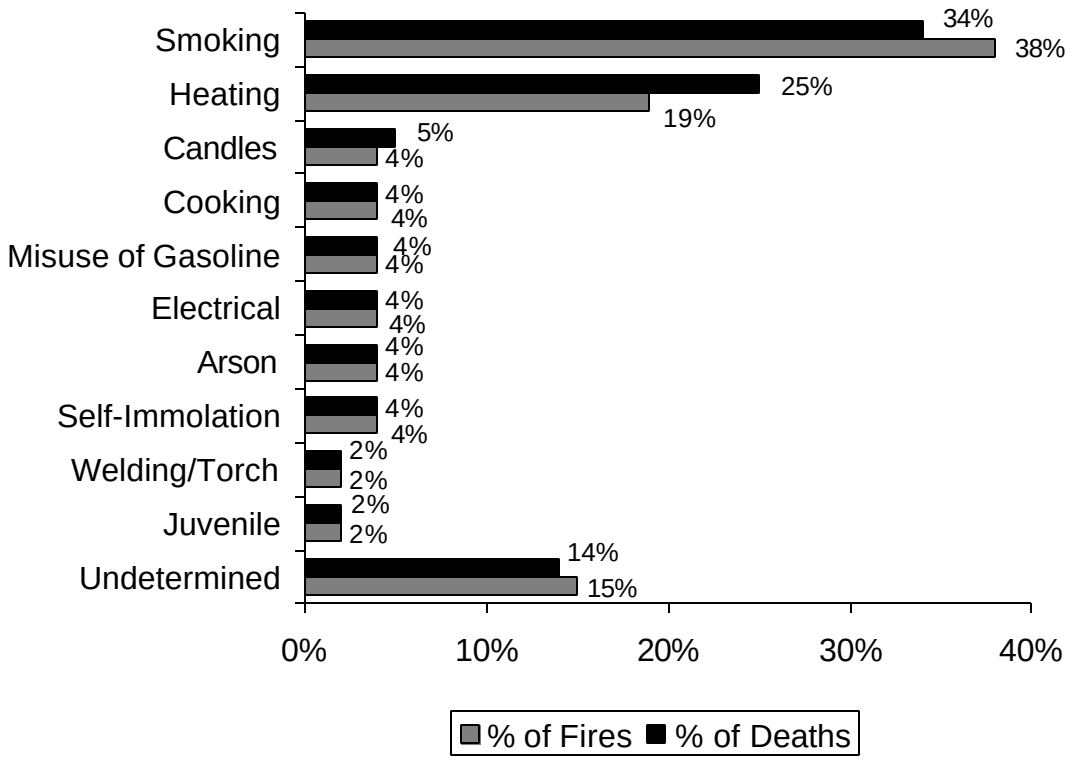
89% of structure fire deaths occurred in residential occupancies. In 2000, there were 56 residential structure fire deaths in 48 residential fatal fires. This represents 89% of the structure fire deaths and 71% of all fire deaths. Thirty-eight (38) fire deaths occurred in 33 fires in one- and two-family dwellings; 17 fire deaths occurred in 14 apartment fires; and one fire death took place in sorority house.



Smoking & Heating Are the Leading Causes of Home Fire Deaths

For years, smoking has been far and away the leading cause of residential fatal fires and fire deaths in Massachusetts, with no other cause coming close. In 1999, cooking and smoking tied as the leading causes of residential fire deaths each causing 24%. In 2000, smoking remained the leading cause of fire deaths causing 34%, or more than one-third. Heating was the number two ranked cause of fire deaths, causing one-quarter, or 25%.

Causes of Residential Fatal Fires and Fire Deaths



17 Fatal Smoking Fires Cause 18 Deaths

In 2000, the improper use and disposal of smoking materials caused 18 fire deaths in 17 fatal fires. The unsafe and improper use of smoking materials caused 34% of residential structure fire deaths and 38% of fatal residential structure fires. Eight (8), or thirty-five percent (35%) of the 23 senior residential structure fire deaths were caused by smoking.

Typical Fatal Smoking Fire

- On March 17, 2000 at 7:13 a.m. the Hopedale Fire Department was called to a fatal fire in a single-family home caused by the unsafe disposal of smoking materials. The victim, a 76-year old female, was sleeping when a discarded cigarette ignited material in her bedroom. She was able to escape, however she died later from burns and smoke inhalation. Smoke detectors were present in the home and did alert the other two occupants to the danger. They were treated for smoke inhalation at a local hospital. Damages from this blaze were estimated to be $75,000.

Smoking While on Oxygen
A growing problem in Massachusetts is people continuing to smoke while using home oxygen systems. Fire officials are concerned because smoking while on oxygen can be deadly to the smoker and to the people around them.

Home oxygen therapy increases the amount of oxygen in the environment. Oxygen increases the speed at which things burn once a fire starts. Oxygen can saturate clothing, fabric, hair, beards, and anything in the area. Never smoke or light a match where oxygen is in use.

- On November 15, 2000 at 7:22 a.m. the Woburn Fire Department was called to a fatal fire in an apartment building caused by smoking while on oxygen. The victim, a 73-year old woman, was using a portable oxygen tank while she was smoking. A match she had used to light her cigarette started the fire. She was unable to escape and was overcome by the heat and smoke generated by the fire. She died from burns and smoke inhalation. Smoke detectors were present and operating. There were no sprinklers present. There was no estimate of the dollar loss incurred by this fire.

9 Fatal Heating Fires Cause 14 Deaths
Nine fatal heating fires caused 14 fire deaths in 2000. Of these nine fatal fires, five were caused by portable space heaters resulting in 10 fatalities. Fatal fires involving portable space heaters had a ratio of deaths to fires of two to one, making them the deadliest type of fatal fire in 2000. This means that space heater fires, on average, tended to kill more than one person per fatal fire. Every other cause of fatal fires averaged at or about one fatality per fire.

- On November 22, 2000 at 9:23 a.m. the Boston Fire Department was called to a fatal fire in an apartment building that was caused by a portable space heater being too close to combustibles in a bedroom. The victim, an 84-year old woman, was unable to escape fast enough and was overcome by the heat and smoke generated by the fire. She died as a result of smoke inhalation. Smoke detectors were present and operating. The damages from this fire were estimated to be $250,000. There was one fire service injury at this fire.

2 Fatal Candle Fires Caused 3 Deaths
Two candle fires accounted for three, or 5%, of residential structure fire deaths, but only 4% of fatal fires.

- On October 1, 2000 at 11:10 p.m. the Springfield Fire Department was called to a fatal fire at a three-family home caused by an unattended candle. The victims, five and nine-year old girls, were sleeping when the fire started. They were trapped in their bedroom and overcome by the heat and smoke generated by the fire. They both died from burns and smoke inhalation. In addition, two civilians and two firefighters were injured in this fire. The Springfield Fire Department was credited with four rescues during this incident. Damages from this fire were estimated to be $50,000.

- On December 18, 2000 at 1:27 p.m. the Medford Fire Department was called to a fatal fire in a single-family home caused by a candle igniting the victim's clothing. The victim, a 64-year old female, was overcome by the flames and died from the burns. There were no smoke detectors present in the house. Damages from this fire were estimated to be $8,000.

2 Fatal Cooking Fires Caused 2 Deaths
Two Massachusetts residents died in two residential fires caused by cooking in 2000. Cooking fires accounted or 4% of the fire deaths and 4% of fatal fires in people's homes in Massachusetts.

- On May 24, 2000 the Turners Falls Fire District was notified that one of its residents had died at the University of Massachusetts Medical Center in Worcester, MA, after having been treated at that facility for burn injuries suffered at his home on May 3, 2000. The fire department was never notified of the fire until after the death of the victim. The victim, a 74-year old male, was burned when his shirt ignited when he leaned next to the gas stove. He fell to the floor and his son-in-law patted down the flames, receiving first and second degree burns to his hands as well. The victim's daughters transported both to the Franklin Medical Center. The elderly fire victim also seemed to suffer from Alzheimer's disease.

- On July 6, 2000 at 2:07 a.m. the Fall River Fire Department was called to a fire in a single-family home caused by unattended cooking materials. The victim, a 47-year old male, was asleep at the time the fire ignited and was overcome by its heat and smoke. He died from burns and smoke inhalation. There were no smoke detectors present in the building. The estimated damages from this fire were $8,000.

2 Fatal Arson Fires Caused 2 Deaths
Arson accounted for 4% of fire deaths and 4% of the fatal fires in residential structures. Two (2) people died in two (2) residential arson fires in 2000.

- On April 4, 2000 at 11:38 a.m. the Springfield Fire Department was called to a fatal arson fire in an apartment building. The fire was ignited by a cigarette in the kitchen and fueled by oxygen supplied through an oxygen line attached to an oxygen cylinder located in the bedroom. The fire was contained to the kitchen and extinguished by the automatic sprinkler system. The victim, a 77-year old woman, was found in the hallway outside of the apartment and transported to a local hospital where she later died. Smoke detectors were present and operated in this fire and no other injuries were associated with this fire. Damages from this fire were estimated to be $20,000.

- On October 17, 2000 at 11:09 p.m. the Templeton Fire Department was call to a fatal arson fire in a single-family home. The arsonist, a 64-year old male, fell and broke his neck while trying to escape the fire that he had just set. He had doused the dining room area with gasoline and ignited it. The fire grew too quickly and he incurred his injury while trying to escape. Damages from this fire were estimated to be $220,000. No one else was injured in this fire.

2 Fatal Fires from the Misuse of Gasoline Caused 2 Deaths
Fires from the misuse of gasoline totaled 4% of the fire deaths and 4% of the fatal fires in people's homes. Two Massachusetts citizens died in two residential fires.

- On March 22, 2000 at 10:18 p.m. the Gloucester Fire Department was called to a fire in a single-family home caused by someone igniting a flammable liquid with a match as they tried to kindle a fire. Arriving units found it impossible to enter the home. The victim, a 40-year old woman, died of burns and smoke inhalation when she was trapped by fire and could not exit the building. Three firefighters and two other civilians were injured in this fire. Estimated damages to the property were $70,000.

- On July 18, 2000 at 11:31 a.m. the Winchester Fire Department was called to a fire at an apartment complex caused by an improper fueling technique of a lawn mower. The victim, a 38-year old male, was unable to escape the fire and died from third degree burns sustained in the fire. The fire was contained to the service area in which it had started. There were no sprinklers present. Smoke detectors were not present in the maintenance room but the others throughout the apartment building did function and alerted all the other occupants to safely vacate the building. There was no estimate of the dollar loss incurred by this fire.

2 Fatal Fires Involving Self-Immolation Took 2 Lives
Two Massachusetts residents committed suicide in two separate incidents by lighting themselves on fire. These deaths accounted for 4% of the fire deaths and 4% of the fatal fires.

- On April 10, 2000 at 9:23 p.m. the Cambridge Fire Department was called to a fire in a sorority house which was believed to be a suicide. The victim, a 20-year old female student, was found by campus police engulfed in flames. The officers used dry chemical fire extinguishers to try and put out the fire. Fire department personnel arrived shortly thereafter and administered oxygen and appropriate first aid. The victim succumbed to the injuries brought about by the burns received from the fire. Seven of the campus police officers were treated with oxygen and transported to local hospitals for evaluation. Damages to the property were estimated to be $2,000.

- On November 17, 2000 at 5:18 p.m. the Worcester Fire Department was called to a fire in the basement of a single-family home. The victim, a 44-year old male, had doused himself in gasoline and ignited himself using wooden stick matches. He died from burns and smoke inhalation. No other injuries were associated with this fire. Damages from this blaze were estimated to be $10,000.

1 Fatal Fire Involving the Use of Welding or Cutting Torches Killed 1 Resident
One man was killed when the torch he was using ignited the liquid propane in the tank stored in the cellar. This fire represents 2% of the fatal fires and 2% of the fire deaths in Massachusetts in 2000.

- On August 17, 2000 at 10:48 a.m. the Easthampton Fire Department was called to a fire in a single family home. The victim, a 95-year old man, was near the home's liquid propane tank using a cutting torch when it ignited. While trying to escape, he fell sustaining a head injury. He died from the head wounds sustained in the fall. Smoke detectors were present and operating. There was no estimation as to the dollar loss incurred by this fire.

1 Fatal Juvenile-set Fire
There was one fatal fire ignited by a juvenile in 2000 causing one fatality. This fire accounted for 2% of the fatal fires and 2% of the fire deaths.

- On January 17, 2000 at 10:59 a.m. the Holyoke Fire Department was called to a fatal fire in an apartment building caused by a child playing with a lighter. The fire began when a child ignited the fabric of some furniture being stored in a closet. While trying to escape, the victim, a four-year old boy was overcome by the smoke and heat generated by the fire. There was no estimation as to the dollar loss incurred by this fire. Detectors were present in other rooms of the apartment and operated.

7 Fatal Fires of Undetermined Causes
Seven fatal residential fires took the lives of eight Massachusetts residents in 2000. These seven fires that remain undetermined after investigation, represent 15% of the fatal fires; and the eight related deaths represent 15% of the fire deaths in 2000.

- On January 16, 2000 at 8:16 a.m. the Lowell Fire Department was called to a fatal fire in a single-family home of undetermined cause. The victim, an 87-year old male, died from burns and smoke inhalation. No other injuries were associated with this fire. There was no estimation as to the dollar loss incurred by this fire.

- On January 18, 2000 at 6:56 p.m. the Fitchburg Fire Department was called to a fatal fire in an apartment building. The victim, a 41-year old man, lived in the basement apartment. The firefighters who found the victim had some difficulty removing him from the apartment because of his size. He died from burns and smoke inhalation. One of the firefighters who was involved in finding the victim ran low on air, exited the structure and passed out for a short time. He quickly regained consciousness and was transported to the hospital. Damages from this blaze were estimated at $50,000.

- On February 21, 2000 at 12:15 a.m. the Gloucester Fire Department was called to a fire in a single-family home of undetermined causes. The victim, a 57-year old male, was overcome by heat and smoke. He died from burns and smoke inhalation. Damages from this blaze were estimated at $95,000.

- On March 4, 2000 at 12:36 a.m. the Brockton Fire Department was called to a fatal fire in a three-family apartment house of undetermined cause. The victim, a 2-year old boy, was overcome by the heat and smoke generated by the fire while sleeping. He died from burns and smoke inhalation. Smoke detectors were present but

not operating. Damages from this blaze were estimated to be $50,000. Two other residents and one firefighter were injured in this fire.

- On August 12, 2000 at 4:32 a.m. the Worcester Fire Department was called to a fire in an apartment building of undetermined cause. The victim, a 66-year old female, was overcome by the heat and smoke and died from burns and smoke inhalation. No other injuries were associated with this fire. Damages from this blaze were estimated to be $40,000. Smoke detectors were present but did not operate in this fire.

- On October 23, 2000 at 5:43 a.m. the Hyannis Fire Department was called to a fatal fire in a single-family home. The victims were a 94-year old female and 93-year old male. The fire originated in the kitchen area of undetermined causes. Both victims were asleep at the time of the fire, however the female victim was found by firefighters in the doorway between the bedroom and second floor hallway. Both victims had been overcome by the heat and smoke generated by the fire. Smoke detectors were present but failed to operate. There were three fire service injuries associated with this fire, and damages were estimated to be $30,000.

- On December 29, 2000 at 9:45 p.m. the Upton Fire Department was called to a fatal fire in a two-family residence most probably caused by the improper disposal of smoking materials. The official cause remains undetermined. The fire began in the living room. The victim, a 41-year old disabled male, was found in the first floor kitchen. He had limited mobility and used a cane to walk. He died from smoke inhalation. Damages from this fire were estimated to be $175,000. Smoke detectors were present and operated.

Living Room or Bedroom is the Area of Origin for Nearly 1/2 of All Victims
Twenty-six (26), or 47% of the civilians that died in residential fires were killed in fires that started in the living room or bedroom. Seventeen victims died in fires that began in the living room, nine succumbed to fires that originated in the bedroom and eight victims perished in fires that began in the kitchen.

Over 1/3 of Deaths Involved Smoking Materials as Form of Heat of Ignition
Of the 36 residential structure fire deaths where form of heat of ignition of the fire was known, 35% involved smoking materials. Twenty-one percent (21%) of the deaths involved heat from an open flame. Another 21% involved heat from arcing or overloaded electrical equipment. Heat from a fuel-fired or fuel-powered object was involved in 12% of the fire deaths. Properly operating electrical equipment was responsible for 7% while hot embers or ashes accounted for 5%. Form of heat of ignition was unknown in 12 deaths. These victims were excluded from the percentage calculations.

Furniture Ignited First in Nearly 1/3 of Deaths
Of the 35 residential structure fire deaths where material first ignited was known, 31% of the fire deaths were from fires where upholstered furniture was the form of material first ignited. Seventeen percent (17%) of deaths occurred when structural members were the first to burn. Another 17% died from fires where clothing was the first material ignited.

Eleven percent (11%) of the deaths occurred in fires where bedding was first ignited. Printed materials were the first materials ignited in 9% of the fire deaths in 2000. Six percent (6%) died from fuel being the first material ignited. Food and rubbish were each the first material ignited in 3% of the fires. First material ignited was unknown in 20 deaths. These victims were excluded from the percentage calculations.

No Working Detectors for Over 1/2 of Residential Fire Victims
Fifty-six (56) people died in residential structure fires in 2000. The smoke detector performance was known for 33 of the victims. Detector performance was unknown or not reported in 18 residential structure fires that killed 23 people.

Victims were not alerted by smoke detectors in 17 fires that killed 20 people, or 60% of the victims. In eight of these incidents, no detectors were present at all. These eight fires claimed the lives of eight individuals. Detectors were present, but did not operate in nine fires that killed 12 people.

Fourteen people died in 14 separate residential fires with detectors that did operate. It is important to remember that detectors provide an early warning of a fire. They do not guarantee an escape if exits are blocked or an individual's clothing ignites. A fire that appears small when discovered can quickly grow beyond an individual's ability to control or escape it. While smoke detectors cannot by themselves save a person who is directly involved in the ignition, they alert other occupants to the danger and give them precious time to escape to safety.

No Working Smoke Detectors in 84% of Fire Deaths in 1 & 2-Family Homes
Sixteen (16) people died in 14 one- and two-family dwelling fires in 2000. Eighty-four percent (84%) of the fire deaths in one- and two-family homes occurred in fires with no detectors at all or with detectors that failed to operate. Of these 16 deaths, eight occurred in homes where smoke detectors failed to work while the other eight deaths were in homes where there were no smoke detectors present. Five deaths occurred in homes where the smoke detectors operated. The seventeen (17) deaths in 14 fires where smoke detector performance was unknown were excluded from these calculations.

Other Residential Occupancies More Likely to be Protected by Smoke Detectors
Eighteen (18) people died in 15 apartment fires in 2000. The detector performance was known for 11 of the victims. Four individuals perished in three fires where smoke detectors were present but did not function. Seven people died in seven other apartment fires were smoke detectors were present and working. Detector performance was unknown or not reported in four fires where six people lost their lives. In the remaining residential structure fire the smoke detectors alerted the other residents of the sorority house.

In residential fatal fires other than the fires that occurred in one- and two-family homes, there were no fatal fires where there were no detectors present.

Over 1/2 of the Structure Fire Victims Were Asleep Prior to Death
Of the 34 fatal structure fire victims for which condition before injury was known, 59% were asleep; 24% were awake and unimpaired; 6% were impaired by drugs or alcohol; 6% were too young to act; 3% had a mental handicap; and the last 3% were bedridden or had another physical handicap. Condition prior to death was unknown for 22 civilians. These victims were excluded from the percentage calculations.

41% of Victims were Escaping at Time of Death
Of the 34 fatal fire victims for which activity at time of death was known, 41% were escaping at the time of death; another 41% were sleeping; 9% of the victims were unable to act; 6% were involved in an irrational action; and 3% were attempting a rescue. Activity at time of death was unknown for 22 victims. These victims were excluded from the percentage calculations.

98% of Victims Suffered Burns, Smoke Inhalation or Both
For the 47 victims where the nature of their injury was known, all but one suffered burns, smoke inhalation, or the combination of both. The other victim was determined to be an arsonist who fell and broke his neck while attempting to escape the fire he had just set. The nature of injury was undetermined in eight deaths. These victims were excluded from the percentage calculation.

FATAL MOTOR VEHICLE FIRES
In 2000 six motor vehicle fires killed 13 civilians. Motor vehicle fire deaths are determined subsequent to the autopsy of the victim, where smoke is found in the lungs of the victim, an indication the victim survived the impact of the collision. One of the fires was an airplane crash, another was an arson, with the remaining four incidents involving motor vehicles being attributed to automobile accidents.

- On May 27, 2000 at 2:06 p.m. the Salem Fire Department was called to a vehicle arson fire in an uncovered parking area. Upon arrival, the car was fully involved and the victim, a 55-year old male, could be seen inside the front passenger seat of the vehicle. The fire had been set using a flammable liquid. The victim died of burns and smoke inhalation in this incendiary fire. The estimated damages from this blaze were $5,000.

- On June 2, 2000 at 6:18 a.m. the Chelsea Fire Department was called to a motor vehicle accident in which a tractor trailer truck crashed into the victim's automobile starting a two-alarm fire. The victim, a 29-year old man, was trapped inside his car and could not escape. He died from burns and smoke inhalation. The estimated damages from this auto accident were $6,000.

- On July 7, 2000 at 12:29 p.m. the North Attleboro Fire Department was called to a multiple fatal motor vehicle accident on Kelley Blvd. which claimed the lives of five victims. The victims were a one-year old female, a 22-year old male, a 33-year old female, a 38-year old male, and a 37-year old female. All of the victims died from

burns and smoke inhalation while trapped in their vehicle. There was no estimation as to the dollar loss incurred by this fire.

- On August 30, 2000 at 2:29 p.m. the Hyannis Fire Department was called to a fatal vehicle fire. The victim was a 53-year old male. The fire was on an unpaved street. No further information is available.

- On October 7, 2000 at 10:06 p.m. the Edgartown Fire Department was called to the state forest near the airport to respond to a plane crash. The victims, a family of four, a 2-year old boy, an 8-year old girl, a 34-year old woman, and a 61-year old man, died from smoke inhalation and the blunt trauma brought about by the crash. No one else was injured in this incident. There was no estimation as to the dollar loss incurred by this fire.

- On October 13, 2000 at 2:25 a.m. the Springfield Fire Department was called to a fire in a single-family home caused when a car crashed into the house and ignited. The victim, a 17-year old male, was pulled from the flaming wreckage by a neighbor before the arrival of the first apparatus. He suffered serious burns, smoke inhalation and other injuries from the crash. No other injuries were associated with this fire. Damages from this fire were estimated to be $5,000 for the automobile and $8,000 for the house.

OTHER FATAL FIRES & EXPLOSIONS

In 2000, three outside and other fire or explosion incidents killed three civilians.

Woman Killed by Stalker with Package Bomb

- On January 20, 2000 at 12:32 a.m. the Everett Fire Department was called to an explosion at a small apartment building. The victim, a 32-year old woman, was killed by a package bomb sent to her by a stalker who had been harassing her for years. Property damages from this explosion were estimated to be $35,000.

Man Dies on Court House Steps

- On April 30, 2000 at 2:01 p.m. the Springfield Fire Department was called to a fire at the Springfield Housing Court that was caused by the unsafe disposal of smoking materials. The victim, a 50-year old man, fell asleep while smoking on the porch of the Court House. The cigarette ignited the victim's clothing. No other injuries were associated with this fire. There was no estimation as to the dollar loss incurred by this fire.

Man Dies When Cutting Torch Ignites Diesel Fumes

- On July 24, 2000 at 12:48 p.m. the Scituate Fire Department was called to a fatal explosion with ensuing fire at a manufacturing site caused by a worker who was attempting to cut a 55-gallon drum that had contained a diesel fuel supplement with an oxygen-acetylene torch. The 61-year old victim was the worker who was using the cutting torch. He later died from injuries sustained in the explosion. The victims'

co-workers extinguished the small blaze that the explosion had ignited. The damages from this fire were estimated to be $20. No one else was injured in this fire.

MULTIPLE FIRE DEATHS

For statistical purposes, a fire is considered a multiple death fire if it kills three or more people. In 2000, there were four multiple death fires which killed 17 people: the Newton office building fire, the Whitman space heater fire, a North Attleboro vehicle fire, and a plane crash in Edgartown.

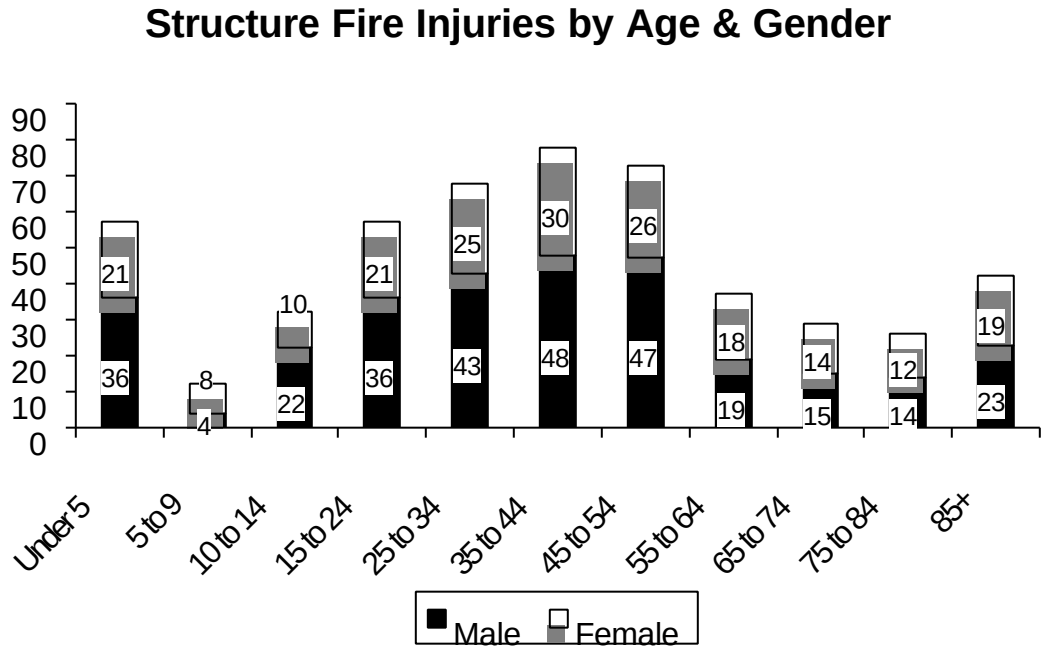
FIREFIGHTER DEATHS

In 2000, there were no fire service fatalities in the Commonwealth of Massachusetts.

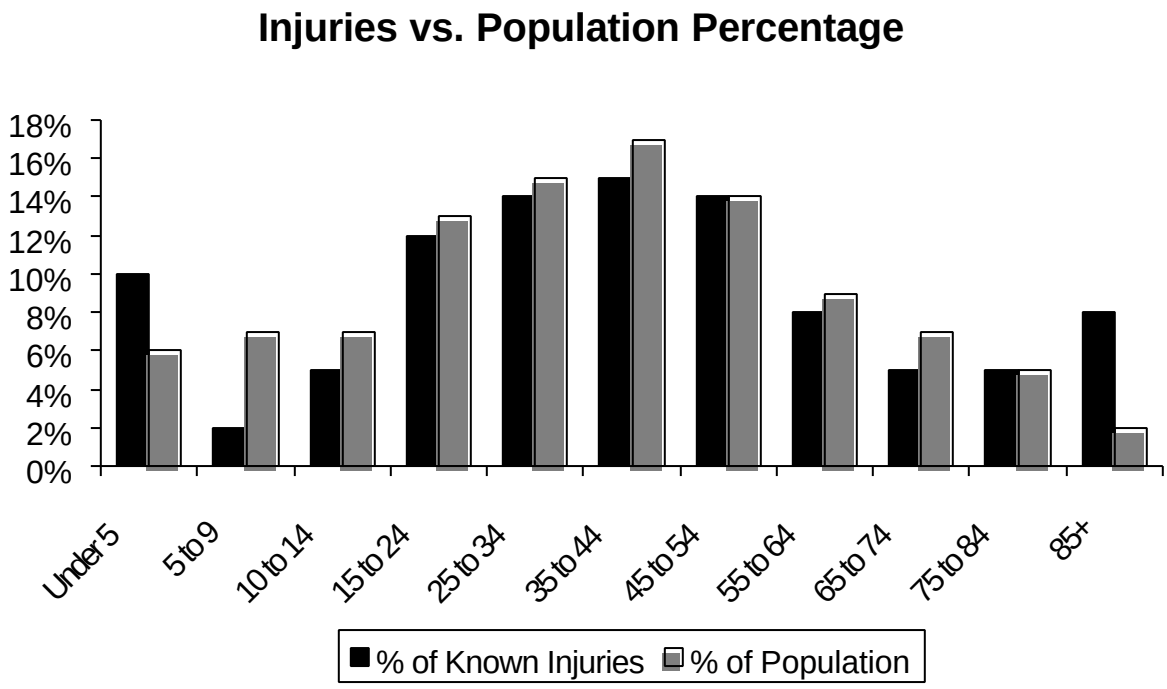
Civilian Injuries

705 Civilians Injured in Fires in 2000
Massachusetts fires injured 705 civilians in 2000, but only 620 of these injuries had casualty reports completed in full. Five hundred ninety (590), or 84%, of civilian injuries occurred in structure fires. Four hundred forty-eight (448), or 76%, of the injuries occurred in residential structure fires. Fifty (50), or 7%, occurred in motor vehicle fires. Fifteen (15), or 2%, occurred in explosion incidents. Eleven (11), or 2%, of civilian injuries occurred in brush fires. Five (5), or less than one percent (0.7%), occurred in outside of structure fires. Four (4) injuries occurred in one trash fire. Another four injuries occurred in outside spills or leaks with ensuing fire. Twenty-six (26), or 4%, of civilian injuries were caused by unclassified fires.

Structure Fire Injuries
Of the 511 civilian injuries resulting from structure fires where gender was reported, 307, or 60%, were men and 204, or 40%, were women. Overall, 191 children under 18 years of age, 302 adults and 95 elderly civilians were injured by structure fires in 2000. The following chart illustrates the structure fire injuries by gender in 2000. Men and women ages 35-44 and 45-54 were injured the most and children ages 5-9 were injured the least in 2000. Fifty-seven (57) children ages 0-4 were injured; 12 children ages 5-9; 32 children ages 10-14; 57 people ages 15-24; 68 people ages 25-34; 78 people ages 35-44; 73 people ages 45-54; 37 people ages 55-64; 29 people ages 65-74; 26 people ages 75-84 and 42 people were injured that were over 85 years of age.



The following graph shows the number of injuries by age group and the percent of the population that age group represents in Massachusetts. When the percentage of injuries is greater than the percentage of population, that group is at a greater risk for being injured in a fire.



Seniors Over 85 and Children Under 5 at High Risk for Fire Injury
The age group of over 85 represents 2% of the population, and they accounted for 8% of the injuries. This puts this age group at four times the risk for injury in a fire, and our data shows this means predominantly elderly women. Children under the age of five represent 6% of the population and yet they accounted for 10% of the injuries in 2000. The disparity in the number of injuries to the percentage of population is most likely caused by the victims' slow response time and the inability to help themselves due to their ages.

Over 1/3 of Injuries Were Due to Asphyxia/Smoke Inhalation
Of the 568 civilian injuries where nature of injury was known, 38%, or over one-third of the injuries, were caused by smoke inhalation only. Thirty-one percent (31%) were caused by burns only. Twenty-one percent (21%) of the injuries occurred when civilian victims had both burns and smoke inhalation. Five percent (5%) of injuries were pain only. Three percent (3%) of injuries were wounds. Dislocation or fractures and sprains or strains each accounted for 1% of civilian structure fire injuries. Shock accounted for less than one percent (0.2%) of the fire related injuries in 2000. The nature of injury was undetermined or not reported in 137 civilian structure fire injuries. These were excluded from the percentage calculations.

People Who Are Awake Are More Likely to Try to Put Fire Out

The following table is a cross tabulation of conditions before injury by activity at time of injury. The majority of victims were attempting fire control at the time of injury and were awake prior to injury. The second most common situation was for the victim to have been sleeping before and during injury, they never woke up because a smoke alarm never went off or they were intimately involved in ignition. People who were awake at the time of the fire were much more likely to try to control the fire. Those who attempt to control a fire rather than escape and summon professional firefighters are much more likely to suffer injuries.

Fifty-one percent (51%) of victims who were awake when a smoke or heat detector operated attempted to extinguish the fire. Men are twice as likely to attempt to control the fire and be injured than women are. One hundred two (102) men, or 65%, were injured while trying to control the fire; while only 46 women, or 29%, were injured trying to put the fire out.

Prevention of these injuries is to have and practice a home escape plan and leave firefighting to the professionals. They have the training and the protective clothing to do the job.

CIVILIAN INJURIES BY ACTIVITY AND PRIOR CONDITION

	Condition Before Injury							
Activity At Injury	**Asleep**	**Bedridden**	**Impaired**	**Too Young**	**Too Old**	**Mentally Handicapped**	**Awake**	**Unknown**
Escaping	40	1	3	2	0	2	77	7
Rescue Attempt	4	0	0	1	0	0	29	3
Fire Control	15	1	0	0	0	1	137	17
Clean-up	1	0	0	0	0	0	3	0
Sleeping	56	1	4	0	0	0	0	3
Unable to act	1	3	1	2	2	0	14	3
Irrational action	1	0	1	0	0	1	10	6
Unknown	2	1	1	1	0	2	83	162
Total	**120**	**7**	**10**	**6**	**2**	**6**	**353**	**201**

Almost 3/4 of Victims Were Awake at Time of Injury

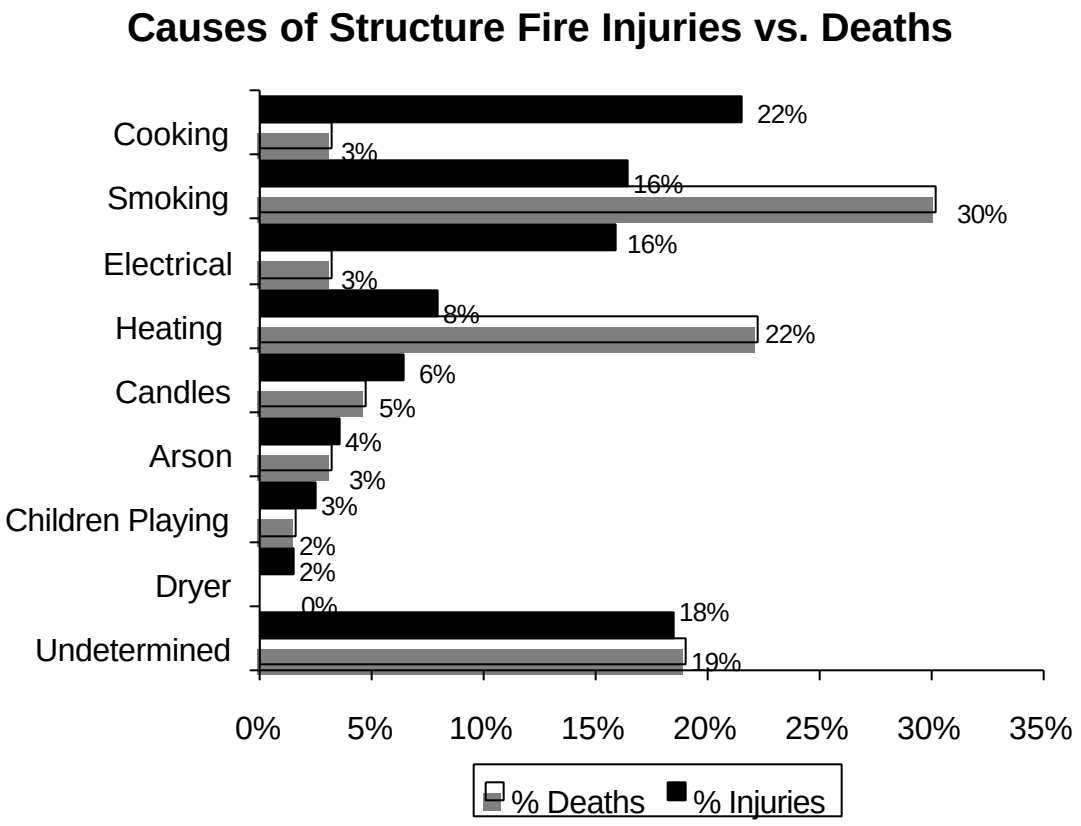
Of the 504 victims for which condition before injury was known, 70% were awake; 24% were asleep; 2% were impaired; 1% were bedridden; 1% were too young; 1% were mentally handicapped and less than 1% were too old to act. There were 201 injuries where the condition before injury was unknown; these were excluded from the percentage calculations.

Over 1/3 Injured While Trying to Control the Fire

Of the 453 victims for which activity at time of injury was known, 38%, were attempting to control the fire; 29% were escaping; 14% were sleeping; 8% were attempting a rescue; 6% were unable to act; 4% were acting irrationally, and 1% were involved in clean-up.

There were 252 injuries where the activity at time of injury was unknown; these were excluded from the percentage calculations. Over one-third were injured while attempting to control the fire themselves. It is important for people to exit a burning building, closing doors behind them to contain the fire, and to call the professional firefighters from outside the burning building.

Cooking Leading Cause of Injuries in Structure Fires
Fires started by cooking caused 22% of structure fire injuries and 3% of structure fire deaths. Smoking fires caused 16% of structure fire injuries and 30% of structure fire deaths. Electrical fires caused 16% of structure fire injuries and 3% of structure fire deaths. Heating equipment fires caused 8% of injuries and 22% of deaths. Candles caused 6% of injuries and 5% of deaths. Arson caused 4% of structure fire injuries and 3% of structure fire deaths. Fires started by children playing with heat of ignition caused 3% of structure fire injuries and 2% of the structure fire deaths. Dryer fires caused 2% of structure fire injuries and none of the deaths. Undetermined fires caused 18% of structure fire injuries and 19% of structure fire deaths in Massachusetts in 2000.



Detectors Operated in 56% of Structure Fires that Caused Injuries
Of the 473 injuries where detector performance was known, 56% occurred where smoke detectors were present and operated. Twenty-two percent (22%) of the injuries occurred in structure fires where detectors were present but did not operate. Sixteen percent (16%)

of the injuries occurred where there were no detectors present in the structure at all. Five percent (5%) of civilian structure fire injuries occurred where the fire was too small to activate the smoke detector. Smoke detector performance was unknown for 117 structure fire injuries. These injuries were excluded from the percentage calculations.

Motor Vehicle Fire Injuries

There were 50 motor vehicle fire injuries in 2000. Of the victims where gender was known, 70% were men and 30% were women. Forty-nine percent (49%) of the injuries were caused by exposure to fire products, when cause was known. Twenty-six percent (26%) were caught in or trapped by the vehicle. Thirty percent (30%) of these injuries were burns only, and another 30% were caused only by smoke when nature of injury was known. Almost half, 48%, of the victims were trying to escape the fire when injured where activity at time of injury was known. Another third, or 33%, were trying to control the fire when the injury occurred. The causes of motor vehicle fires that injured civilians in 2000 included fuel spills, collisions, arson, and mechanical malfunctions. See the Motor Vehicle Fire section for safety tips in the event of a car fire.

Outside and Other Fire Injuries

Sixty-five (65), or 9%, of civilian fire injuries occurred in outside and other fire incidents. Fifteen (15), or 2% of civilian injuries were caused by explosions with no after-fire. Eleven (11), or 2%, of civilian injuries occurred in brush fires. Five (5), or 0.7%, occurred outside of a structure. Outside spills or leaks with ensuing fire and trash fires each had four injuries, or 0.6% of the total injuries. Twenty-six (26), or 4%, of civilian injuries were caused by unclassified fires.

Where gender was known, 73% of the civilian victims were men and 27% were women. Burns accounted for over half (56%) of the injuries to this group, where nature of injury was known. The victim was intimately involved with the ignition in over 48% of these injuries, where location at ignition was known.

Safety Practices are the Best Prevention Methods

In a typical nighttime fire, there is a window of 2-4 minutes in the average home after the smoke detector sounds for the family to get out safely. In a few minutes, heat and toxic gases make escape impossible. To survive a fire one must install and maintain smoke detectors and have an escape plan. It is these types of basic fire safety practices that are ignored by too many Massachusetts residents and the result is fires and injuries.

Home Escape Plan

- Practice your home escape plan with the whole family twice a year.
- Plan two ways out of each room. The easy way out is probably a door and the second way out might be a window.
- If you plan for a child or a senior to exit a window, make sure they can open it easily.
- If you can’t get out, close your door and go to the window and signal for help. Teach children to never hide under beds or in closets.
- If you must go through smoke, crawl low. The coolest, cleanest air will be about 18 inches off the ground.

- Have a meeting place outside where everyone will meet. Be able to tell the fire department if everyone is out safely.
- Stay out; don't go back into a burning building for anything.
- Telephone the fire department from a neighbor's house or use the fire alarm emergency box.

Smoke Detectors
- Install smoke detectors on every level and outside each sleeping area.
- Test smoke detectors monthly.
- Replace the battery twice a year.
- Never disable your detector.

Dryer Safety
- Clean the filter screen after each load.
- Stay home while the dryer is in use.
- Clean vents to outside.
- Vacuum the motor area periodically.
- Clean commercial dryer vents regularly.

Cooking Safety
- Put a lid on a grease fire to smother it then turn off the heat. Baking soda will also work.
- Wear short or tightfitting sleeves when cooking. Loose sleeves easily catch fire.
- Never throw water on a grease fire. Water will only spread the fire around.
- Never move a burning pan. You can too easily ignite your clothes or spill the fire onto someone or something else.
- Stand by your pan! Never leave cooking unattended.

Safe Smoking
- Quit!
- Never smoke in bed.
- Use large ashtrays with center rests so cigarettes fall into the ashtray not on the floor.
- Restrict smoking to outdoors.
- Do not permit smoking in homes where oxygen is in use.

Fire Service Injuries

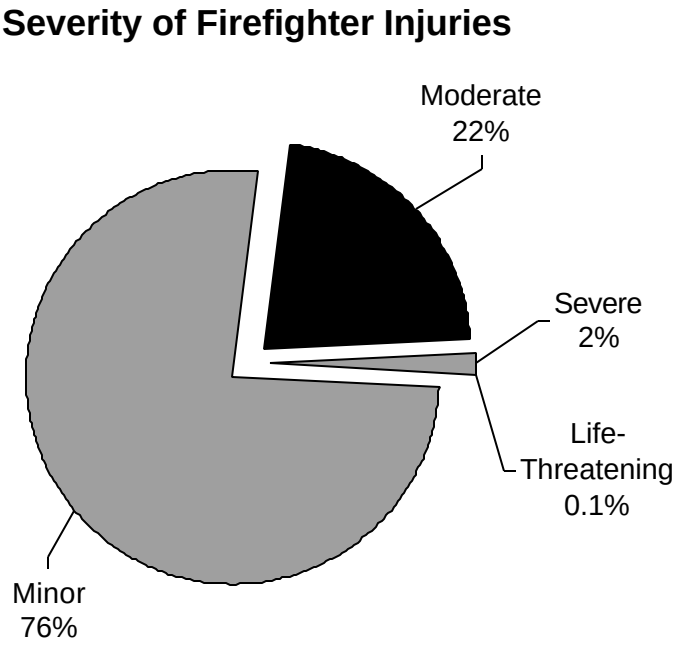
837 Firefighters Injured in 2000
In 2000, 837 firefighters were injured while fighting the 24,931 reported fires in Massachusetts. On average, a firefighter was injured at one of every 30 fires in 2000. Seven hundred and sixty (760) firefighters were injured at structure fires. Thirty-three (33) firefighters were injured at motor vehicle fires. Forty-four (44) firefighters were injured at outside and other fires.

Firefighters Injured at 1 of Every 8 Structure Arsons
Firefighters were injured more frequently at structure fires than any other type of fire. Ninety percent (90%) of firefighter injuries occurred at structure fires.

Arsons accounted for 116, or 14%, of firefighter injuries in 2000. Ninety-nine (99) of these 116 arson-related injuries occurred at structure arsons. These 99 injuries represent 13% of the number of firefighter injuries incurred at structure fires; and 12% of the total firefighter injuries in 2000. One firefighter was injured at every eight structure arsons.

Electrical fires are the second most dangerous type of structure fire for firefighters. Ninety-five (95), or 13% of firefighter injuries occurred at electrical structural fires. Smoking fires accounted for 8% and cooking and heating each accounted for 6% of fire service personnel injuries at structure fires.

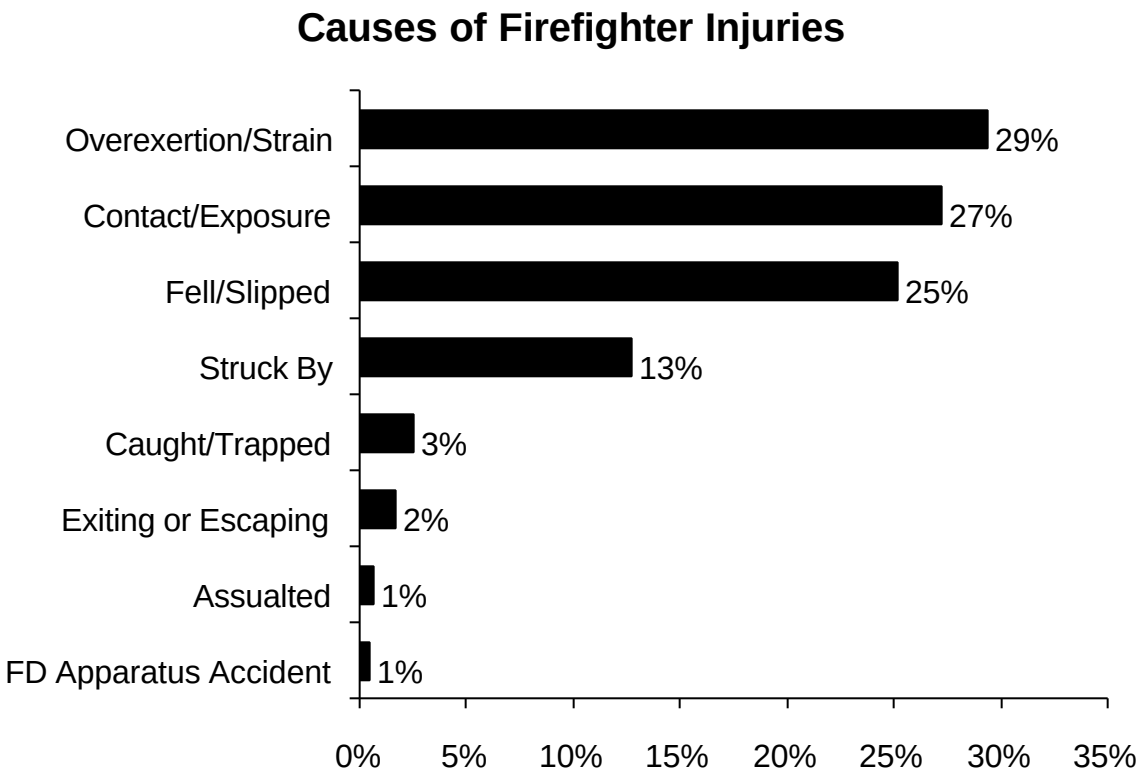
76% of Firefighter Injuries Minor
When examining the severity of the 837 firefighter injuries, 76% were reported as minor. This means that the injury required no immediate medical care and posed no danger of



death or disability. Moderate injuries accounted for 22% of firefighter injuries, meaning that immediate medical attention was needed but there is little danger of death or permanent disability. Two percent (2%) of firefighter injuries were coded as severe. This means that the injury was potentially life threatening if the condition was not controlled. Less than 1% of the firefighter injuries were life threatening, where body processes and vital signs were not normal.

Over 1/4 of Injuries from Overexertion or Strain

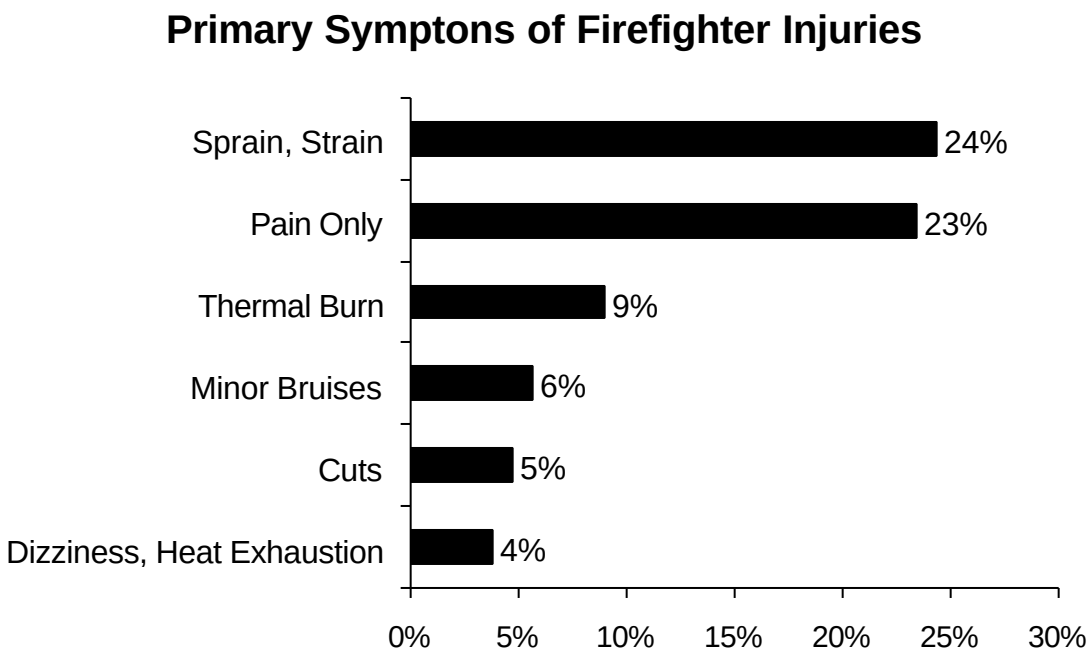
Twenty-nine percent (29%) of the 595 firefighter injuries where cause is known were due to overexertion or strain; 27% were caused by contact with or exposure to some object or substance; 25% of firefighters were injured when they slipped or fell; 13% were injured when they were struck by something; 3% were injured because they were caught or trapped; 2% of injuries were incurred when the firefighter was exiting or escaping, and 1% each occurred during an assault or an apparatus accident. The cause was not reported for 247 firefighter injuries. These injuries were excluded from the percentage calculations.



24% Experienced Sprains or Strains; 23% of Firefighters Reported Pain

Of the 633 firefighter injuries where primary symptom was known, 24% of injured firefighters reported sprains or strains as their primary symptom; 23% reported pain only; 9% reported thermal burns; 6% reported minor contusions or bruises; 5% reported lacerations or cuts; and 4% reported dizziness, fainting, weakness or heat exhaustion.

Primary apparent symptom was not reported for 209 firefighter injuries. These injuries were excluded from the percentage calculations.



Firefighters Face Other Risks in Addition to Fires
The Massachusetts Fire Incident Reporting System only collects information about fires. Firefighters face many other dangerous situations in addition to those found at fires. Many are also injured while controlling hazardous materials incidents, performing rescues and extrications, performing emergency medical services, inspections and other activities.

Look at Symptoms Incurred by Different Parts of Body to Prevent Injuries
Different parts of the body suffer different types of injuries. The following chart shows the types of injuries suffered by different parts of the body. For example, 31% of eye injuries were caused by foreign objects, thermal burns caused 51% of the injuries to the ears and face, 51% of the injuries to the back and spine were only pain, and puncture wounds caused 24% of the foot injuries.

Firefighter Injuries by Part of Body

Eyes (32)

Foreign object	31%
Avulsion	16%
Chemical burn	9%
Laceration, cut	9%

Respiratory (42)

Asphyxiation	33%
No apparent symptom	31%
Shortness of breath	21%

Trunk (107)

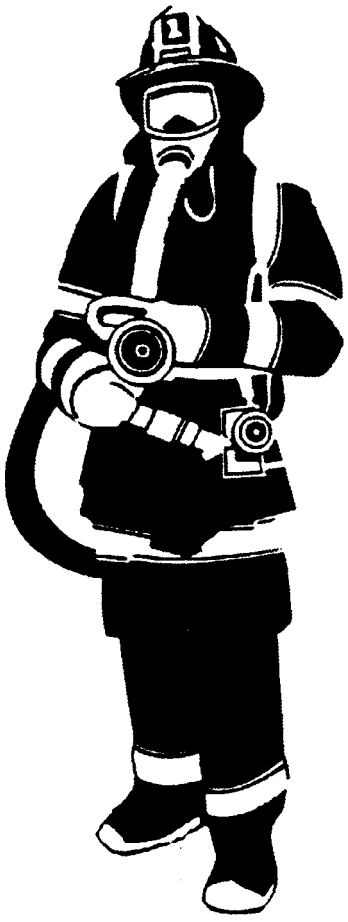
Pain only	35%
Sprain, strain	24%
Thermal burn	12%

Hand, Fingers (83)

Cut, laceration	23%
Thermal burn	14%
Swelling	10%
Bruise, minor trauma	8%
Pain only	7%
Abrasion	7%

Leg (33)

Sprain, strain	52%
Pain only	18%
Bruise, minor trauma	9%
Abrasion	6%



Ears & Face (43)

Thermal burn	51%
Laceration, cut	9%
Bruise, minor trauma	9%

Back & Spine (120)

Pain only	51%
Sprain, strain	43%

Arm (34)

Sprain, strain	29%
Laceration, cut	29%
Bruise, minor trauma	12%

Wrist (13)

Pain only	31%

Knee (54)

Pain only	50%
Sprain, strain	24%
Bruise, minor trauma	9%

Foot (17)

Sprain, strain	29%
Puncture wound	24%
Pain only	18%
Bruise, minor trauma	18%

Arson Fires

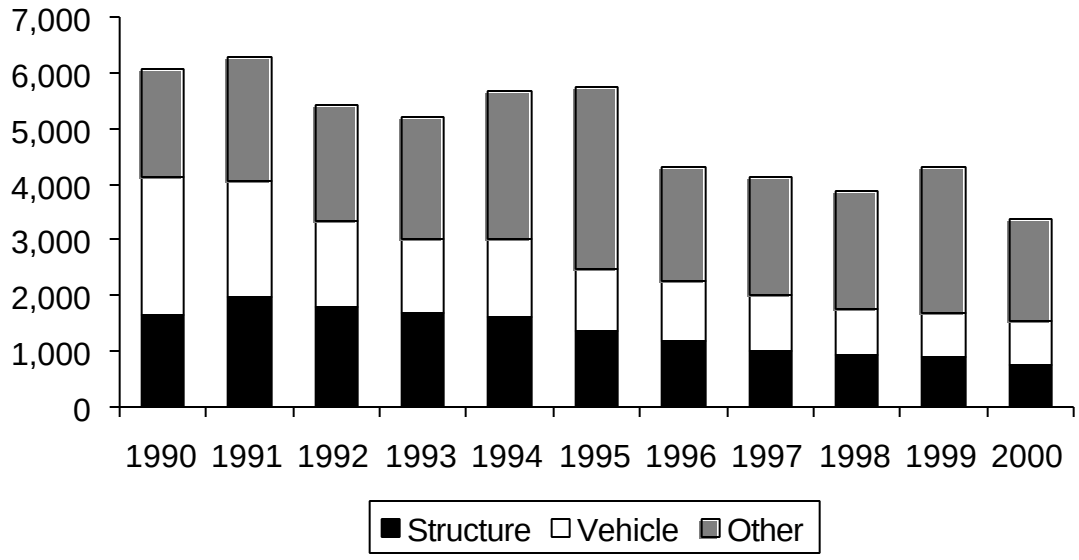
3,360 Arsons - 747 Structures, 798 Vehicles, 1,815 Other Arsons
Three thousand three hundred sixty (3,360), or 13%, of the 24,931 fire incidents reported to the Massachusetts Fire Incident Reporting System were considered to be incendiary or suspicious, for the purpose of analysis, arson. The 747 structure arsons, 798 motor vehicle arsons, and 1,815 outside and other arsons caused three civilian deaths, accounting for 4% of civilian deaths, 21 civilian injuries and 115 fire service injuries. The estimated dollar loss from arson was $21.3 million. The average dollar loss per arson fire was $6,350. Mainly due to the large drop in outside and other arson, total arson was down 22% from 4,307 in 1999.

The table below illustrates that structure arsons, vehicle arsons, and outside and other arsons are at an all-time low. This caused a decrease in total arsons from 4,307 in 1999 to 3,360 in 2000.

ARSONS BY YEAR

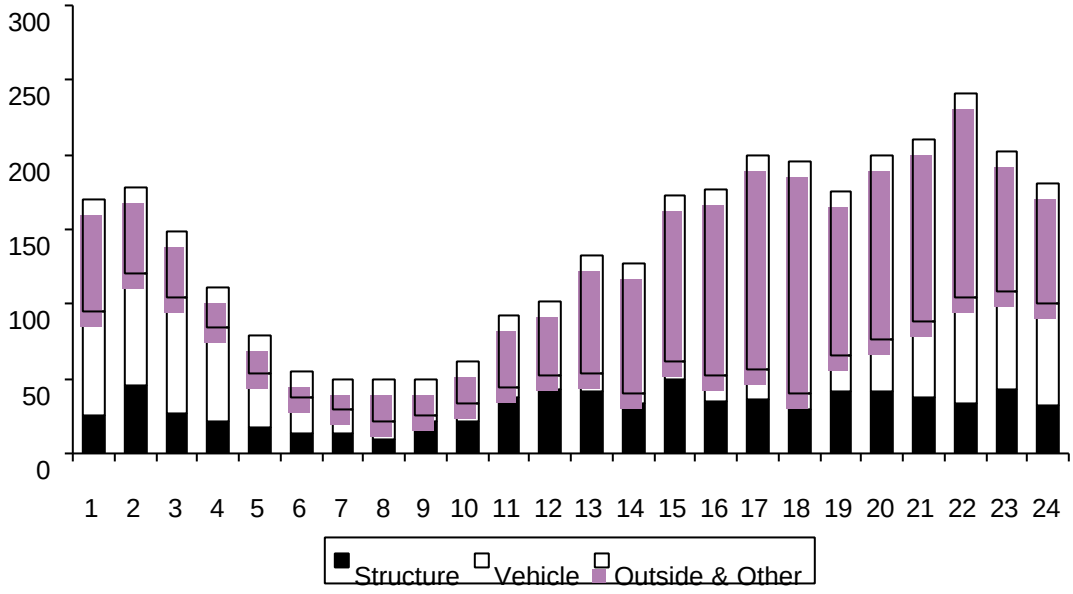
Year	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
2000	3,360	747	798	1,815
1999	4,307	886	818	2,603
1998	3,882	939	836	2,107
1997	4,131	1,020	979	2,132
1996	4,296	1,168	1,082	2,046
1995	5,760	1,377	1,093	3,290
1994	5,686	1,625	1,395	2,665
1993	5,221	1,684	1,329	2,208
1992	5,422	1,807	1,543	2,072
1991	6,289	1,974	2,084	2,231
1990	6,050	1,648	2,463	1,939

Arson Situation Found by Year 1990 - 2000



The following chart illustrates the types of arsons by the time of day they occur. Midnight to 1:00 a.m. is represented by 1; 1:01 a.m. to 2:00 a.m. is represented by 2, etc. Arson is most likely to occur between the hours of 5:00 p.m. and midnight. The peak times for structure arson was from noon to 3:00 p.m. Motor vehicle fires were most likely to occur between 10:01 p.m. and 3:00 a.m. Outside and other arsons peaked from 4:01 p.m. to 7:00 p.m. and again at 10 p.m.

Type of Arson by Time of Day



Structure Arson

747 Arsons, 2 Civilian Deaths, 19 Civilian Injuries, 98 Fire Service Injuries
Seven hundred forty-seven (747), or 7%, of the 10,279 structure fires were considered incendiary or suspicious in 2000, down 15% from 886 in 1999. The two civilian deaths accounted for 3% of the total civilian death count. The 19 civilian injuries accounted for 3% of the overall civilian injuries and 90% of civilian arson injuries. Ninety-eight (98) fire service injuries accounted for 12% of the total fire service injuries and 85% of the injuries fire fighters sustained in arsons. The estimated dollar loss for structure arsons was $16.4 million, accounting for 9% of the overall dollar loss and 77% of the estimated dollar loss in arson incidents. The average loss per structure arson was $21,981.

Structure Arsons Pose High Injury Risk to Firefighters
Firefighters were injured at 1 of every 7.6 structure arsons in 2000. Compare that to the fact that overall at structure fires, fire service personnel are injured at 1 of every 12.3 incidents. This means that a firefighter was 38% more likely to be injured at a structure arson than at a structure fire that was not incendiary or suspicious.

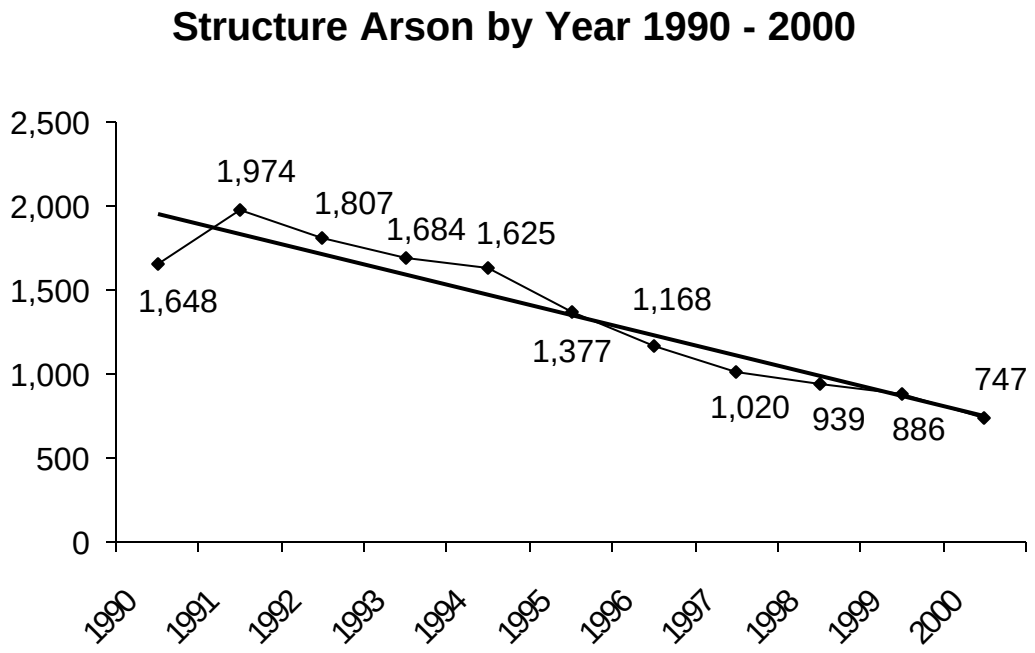
53% of Structure Arsons Occurred in Residences
Three hundred ninety-four (394), or 53%, of the 774 structure arsons occurred in residential occupancies. The following table shows the number of structure arsons, civilian deaths, civilian injuries, fire service injuries, dollar loss and the percentage of the total structure arsons for each occupancy type.

STRUCTURE ARSON BY OCCUPANCY TYPE

Occupancy	Structure Arsons	Percent of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
Public Assembly	30	4.0%	2	0	0	0	$201,975
Educational	122	16.3%	4	0	0	0	844,750
Institutional	18	2.4%	0	1	0	0	98,035
Residential	**394**	**52.7%**	**66**	**17**	**0**	**2**	**9,449,822**
1- & 2- Family	*132*	*17.7%*	*21*	*8*	*0*	*1*	*4,434,481*
Apartments	*226*	*30.3%*	*44*	*8*	*0*	*1*	*4,710,34*
Other Residential	*36*	*4.8%*	*1*	*1*	*0*	*0*	*305,000*
Stores, Offices	56	7.5%	3	1	0	0	1,953,135
Basic Industry	3	0.4%	0	0	0	0	600
Manufacturing	14	1.9%	1	0	0	0	1,733,500
Storage	61	8.2%	13	0	0	0	1,291,501
Special	46	6.2%	9	0	0	0	339,701
Unclassified	3	0.4%	0	0	0	0	507,000
Total	**747**	**100%**	**98**	**19**	**0**	**2**	**$16,420,019**

Structure Arson Down 46% Since 1990

After a slight increase from 1990 to 1991, structure arson has been on a downward trend since 1991 when 1,974 structure arsons were reported to MFIRS. Structure arsons have decreased 46% since 1990. The chart below shows the trend of structure arsons in the 1990's.



The following table shows the cities that reported the most structure arsons in 2000, their 2000 population according to the United States Census, the number of structure arsons reported in 2000, the rate of structure arsons per 1,000 people in 2000, and the same information for 1999. The cities are ranked by the 2000 rate of arsons per 1,000 population.

The City of Boston, as the largest city in the Commonwealth, leads the state in the number of structure arsons, yet several other cities have higher structure arson *rates*. Although the Town of Webster ranked 15th in total structure arsons, its rate of 0.61 structure arsons per 1,000 population was the highest in the state and was more than five times the state structure arson rate of .12 per 1,000 population.

MASSACHUSETTS CITIES WITH THE MOST STRUCTURE ARSONS IN 2000

City	Population	2000 Arsons	2000 Rate/ 1,000 Pop.	1999 Arsons	1999 Rate/ 1,000 Pop
Webster	16,415	10	0.61	2	0.12
Holyoke	39,838	23	0.58	30	0.72
Chelsea	35,080	15	0.43	5	0.17
Fitchburg	39,102	15	0.38	7	0.17
Fall River	91,938	33	0.36	28	0.31
Springfield	152,082	50	0.34	58	0.39
Lawrence	72,043	22	0.31	42	0.61
Boston	589,141	150	0.25	200	0.36
Haverhill	58,969	12	0.20	10	0.19
Brockton	94,304	16	0.17	26	0.28
Cambridge	101,355	17	0.17	13	0.14
Lynn	89,050	14	0.16	12	0.15
Lowell	105,167	15	0.14	28	0.28
Worcester	172,648	24	0.14	39	0.23
New Bedford	93,768	10	0.11	11	0.11
Massachusetts	**6,349,097**	**747**	**0.12**	**886**	**0.15**

Motor Vehicle Arson

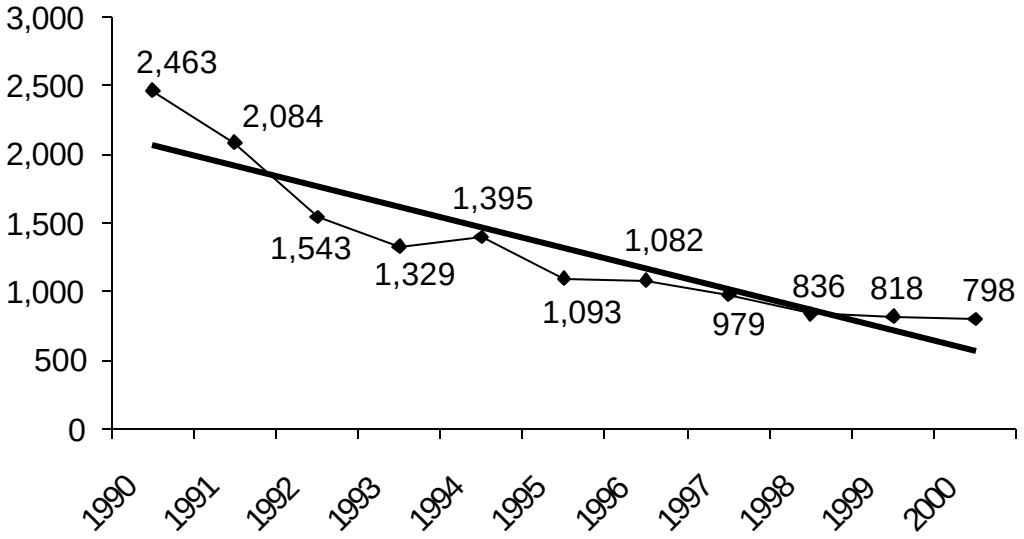
798 Arsons, 1 Civilian Death and 6 Fire Service Injuries

Seven hundred ninety-eight (798), or 15%, of the 5,473 vehicle fires were considered incendiary or suspicious in 2000. The one civilian death accounted for 1% of the overall civilian deaths and 8% of the motor vehicle deaths. Six (6) fire service injuries accounted for 1% of the total fire service injuries and 18% of firefighter injuries associated with motor vehicle fires. The estimated dollar loss in motor vehicle arsons was $4.4 million, accounting for 2% of the overall fire dollar loss. The average loss per vehicle arson was $5,607. Automobiles and vans accounted for 83% of the 753 motor vehicle arsons for which mobile property type was reported.

The Burned Motor Vehicle Reporting Law

The Massachusetts Fire Incident Reporting System identified motor vehicle fires and motor vehicle arson as a major problem in 1985. The Burned Motor Vehicle Reporting Law took effect in August of 1987. The law requires owners of burned motor vehicles to personally appear at fire headquarters in the community where the fire occurred to complete a report. The graph below shows the effectiveness of this law. Since the law took effect in 1987, motor vehicle arsons have decreased 84% from 5,116 in 1987 to 798 in 2000.

Motor Vehicle Arson by Year 1990 - 2000

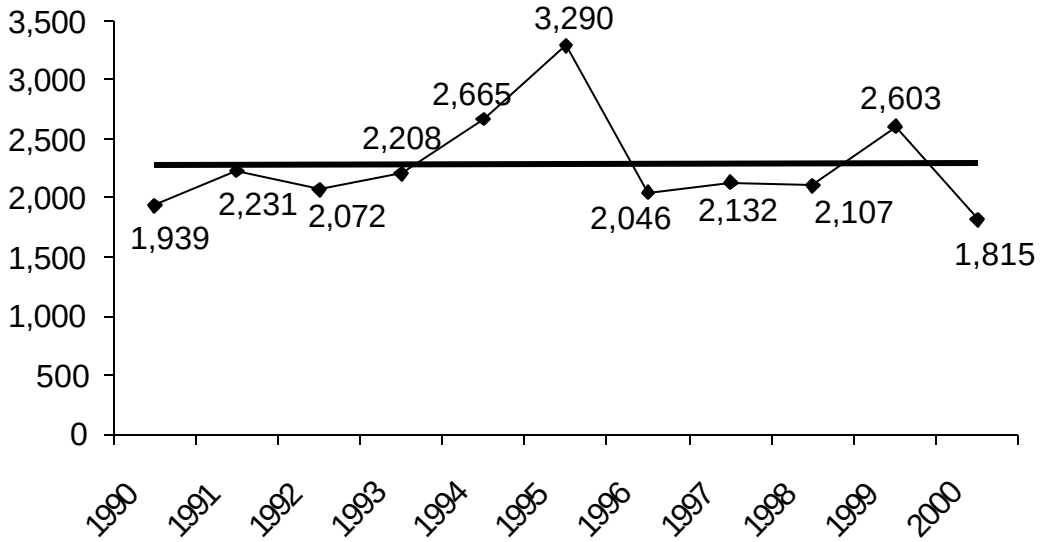


Outside and Other Arson

1,815 Arsons, 2 Civilian Injuries, 11 Fire Service Injuries

One thousand eight hundred fifteen (1,815), or 20%, of the total outside and other fires were considered incendiary or suspicious in 2000. Two civilians were injured in outside and other arson fires. Eleven (11) firefighters were injured in these incidents. All of the

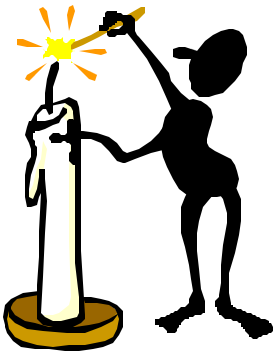
Outside & Other Arson by Year 1990 - 2000



injuries occurred at brush fires. The estimated dollar loss for these arsons was $442,361. It is important to keep in mind that no-loss fires are voluntarily reported and these numbers represent only a fraction of the problem. Outside and other arsons fell by 30% from the 2,603 reported in 1999.

Candle Fires

281 Fires Caused 3 Civilian Deaths and $3.5 Million in Damages
In 2000, candles caused 281 fires. These fires caused 3 civilian deaths, 35 civilian injuries, 22 firefighter injuries and an estimated dollar loss of $3.5 million in damages. There was a 15% decline from the 332 fires in 1999 for fires started by candles in Massachusetts.



92% of Candle Fires Occurred in Homes
Of the 281 candle fires, 92% were residential structure fires. Candles caused 258 residential structure fires, three civilian deaths, 35 civilian injuries, 22 firefighter injuries and an estimated dollar loss of $3,462,424.

Nearly 1/2 of Candle Fires in Homes Occurred in the Bedroom
Of the 258 candle fires in residential structures, 45% occurred in the bedroom. Fourteen percent (14%) occurred in the living room; 12% occurred in the bathroom; another 12% started in the kitchen and 3% started in the living room. In nine candle fires the fire department did not specify the area of origin. These were excluded from the percentage calculations.

Smoke Detectors Operated in Over 2/3 of Candle Fires in Homes
Of the 220 candle fires in homes where smoke detector status was known, smoke alarms operated in 67%. Smoke detectors were present but did not operate in 20% of these incidents. No detectors were present in 9% of candle fires in people's homes. Four percent (4%) of the candle fires were too small to activate the smoke detector. In 38 incidents, the smoke detector status was undetermined or not reported. These were excluded from the percentage calculations.

In the fatal candle fire where two civilians were killed, the smoke detector status was unknown. In the other fatal candle fire, smoke detectors were not present in the home.

- On October 1, 2000 at 11:10 p.m. the Springfield Fire Department was called to a fatal fire at a three-family home caused by an unattended candle. The victims, five and nine-year old girls, were sleeping when the fire started. They were trapped in their bedroom and overcome by the heat and smoke generated by the fire. They both

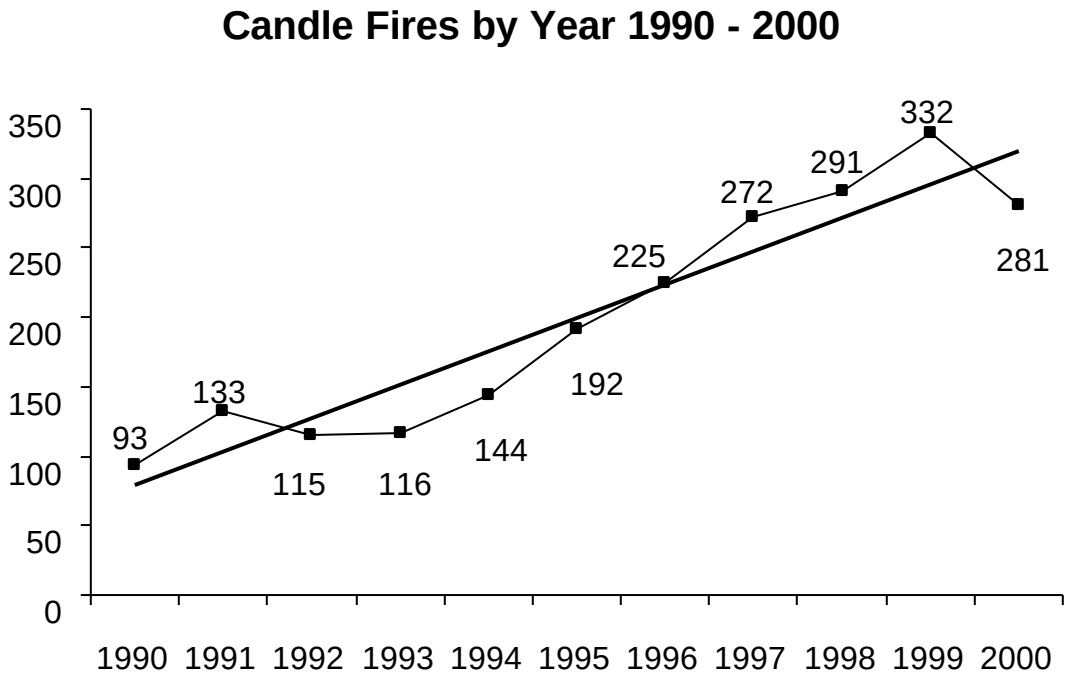
died from burns and smoke inhalation. In addition, two civilians and two firefighters were injured in this fire. The Springfield Fire Department was credited with four rescues during this incident. Damages from this fire were estimated to be $50,000.

- On December 18, 2000 at 1:27 p.m. the Medford Fire Department was called to a fatal fire in a single-family home caused by a candle igniting the victim's clothing. The victim, a 64-year old female, was overcome by the flames and died from the burns. There were no smoke detectors present in the house. Damages from this fire were estimated to be $8,000.

Candle Safety Tips

- Burn candles in the center of a 1-foot **Circle of Safety,** free of anything that can burn.
- Stay in the same room with burning candles; do not leave unattended.
- Burn candles on a non-combustible surface such as a ceramic saucer, or plate.
- Be sure to snuff out candles before falling asleep, going out, or leaving the room.
- Teach everyone in the family the rules of safe candle use.
- Keep candles out of reach of small children and pets.

Candle fires have become a serious problem in Massachusetts during the decade of the 1990's, nearly tripling from 93 incidents in 1990 to an all time high of 332 in 1999. The following table shows the increase from 93 candle fires in 1990 to 332 in 1999. In 1999, a new effort to analyze these incidents began. In conjunction with the National Fire Protection Association (NFPA), the Office of the State Fire Marshal conducted a follow-up survey that went out to any fire department having a candle fire. The goal was to gain a greater understanding of these incidents, why they are happening and what we can do to prevent them.



Major findings from the report are:

- 75% of the fires occurred when the candle was left unattended.
- 40% of the fires resulted from combustible materials being too close to the candle.
- Teenagers face the greatest risk of starting candle fires. Although teens account for only 9% of the state population, 21% of the state candle fires were attributed to them. Two-thirds of candle users, however, were between 20 and 64 years old.
- 98% of the candles used in Massachusetts' candle fires were not needed as sources of light but were used for other purposes such as decoration, pleasure or mood.

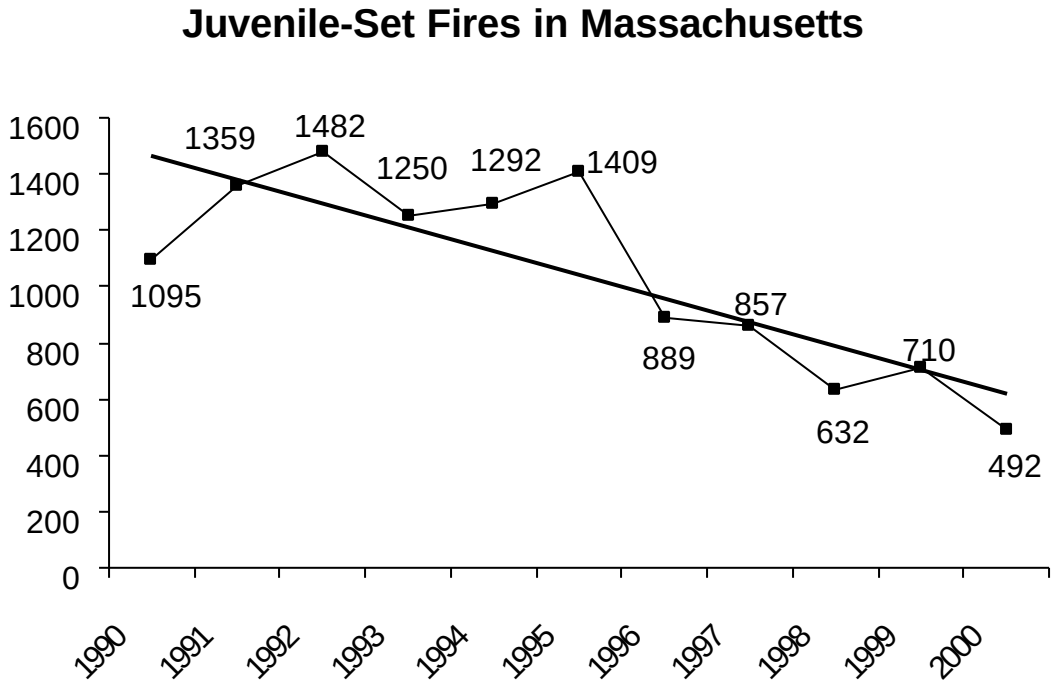
The year 2000 may be the beginning of a new downward trend thanks to stronger public education and tougher industry standards. There was a 15% drop from the all time high of 332 reported candle fires in 1999. During this year, State Fire Marshal Coan began reaching out to candle manufacturers and retailers in Massachusetts to ask for their help in educating consumers on candle fire safety and to highlight and separate fire safety information from other fire safe use tips. He also asked them to adopt the candle **Circle of Safety** logo, to use it in their printed materials and on their webpages.

A copy of the study and more information on candle fire safety can be found on our webpage at http://www.state.ma.us/dfs/lifesafe/candlesafety.htm.

Children and Fire: a Deadly Combination

Children Playing With Fire Caused 492 Fires

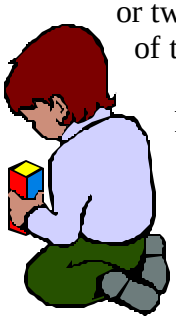
In 2000, children playing with matches, lighters and other heat sources caused 492 reported fires, one civilian death, 16 civilian injuries, 34 fire service injuries and an estimated dollar loss of nearly $3.8 million. The average dollar loss per fire was $7,876. These fires are down 31% from 710 incidents in 1999. The trend over the past 11 years has been declining. This may be due to the number of juvenile firesetters' intervention programs across the Commonwealth.



The 492 fires set by children included: 164 structure fires; 207 brush, tree or grass fires; 81 rubbish fires; 24 outdoor fires involving property of value; six motor vehicle fires; one spill or leak with an ensuing fire and nine fires that could not be classified further.

Over 2/3 of Structure Fires Set by Children Involved Matches and Lighters
Fourteen (14) civilian injuries and 32 fire service injuries occurred in the 164 structure fires set by children. Child-set structure fires caused an estimated dollar loss of $3.8 million with an average dollar loss of $23,542.

Forty-three percent (43%) of the 164 structure fires caused by children occurred in one- or two-family homes and 44% occurred in apartments. Forty-one percent (41%) of the juvenile-set fires started in the bedroom.



Forty-three percent (43%) of the structure fires set by children were started using lighters. Twenty-four percent (24%) of the structure fires were started with matches. Therefore, just over two-thirds of juvenile set fires were started by matches and lighters. Eleven percent (11%) of the juvenile set structure fires involved candles. This demonstrates a need for education to both parents and children on the danger of matches, lighters and candles.

Child Dies Playing with Lighter
- On January 17, 2000 at 10:59 a.m. the Holyoke Fire Department was called to a fatal fire in an apartment building caused by a child playing with a lighter. The fire began when a child ignited the fabric of some furniture being stored in a closet. While trying to escape, the victim, a four-year old boy was overcome by the smoke and heat generated by the fire. There was no estimation as to the dollar loss incurred by this fire. Detectors were present in other rooms of the apartment and operated.

Child Playing with Matches Injured 6 Firefighters & $1 Million in Damages
- On Wednesday July 12, 2000 at 3:46 p.m. the Springfield Fire Department was called to a fire in an apartment building caused by a child playing with matches on the rear porch. The porch ignited and the fire spread throughout the entire building and spread to an adjacent building. Six (6) firefighters were injured in this fire. There were no civilian injuries. Damages from this fire were estimated to be $1,000,000. Smoke detector status was undetermined and there were no sprinklers present. Springfield Fire personnel spent approximately 16 hours at the site of this fire.

Figures Underestimate the Problem
Because the fire department may consider a fire deliberately set by a juvenile or a group of children to be incendiary, these statistics should be considered an underestimate of the severity of the juvenile firesetting problem. For example, 56% of the 203 structure fires in non-residential schools were considered incendiary or suspicious. Because most of these fires occurred during the school day, it is likely that many were set by students. The ignition factor was unknown or not reported in 42% of the outside fires. Children were probably involved in many of these.

Beginning January 1, 2002, Version 5 of the Massachusetts Fire Incident Reporting System (MFIRS v5) will be able to capture these types of incidents by allowing the recording of multiple causal factors. There is also an Arson/Juvenile Firesetting Module to collect information when a fire is intentionally set by an adult or set by a child. The

information that will be collected with regard to juvenile firesetting will include age, race, family type, gender and ethnicity. Also included will be the motivation and risk factors associated with firesetting, for example, if there is a history of shoplifting, stealing, physical assault, fire play, transiency, etc.

Parents and Caregivers Must Protect Children from Themselves

Parents and caregivers must take steps to protect their children from the dangers of fire.

- Set a good example and practice fire safety yourself.
- Make sure that all matches and lighters are stored out of children's reach.
- If you need a lighter, buy one that is child resistant. As of July, 1994, all disposable butane lighters and most novelty-lighters must be able to resist the efforts of 85% of children under 5 who tried to operate them in a specified test. Some are easier to use than others. If one brand is cumbersome, switch to another. *Do not disable the child-resistant feature.*

- Supervise young children at all times. Teach children the safe uses of fire, such as birthday candles and barbecuing. When a child is old enough let him or her light the candles while you watch. It is only safe for children to use fire when adults are present.
- If your child seems overly curious about fire or has set a fire, call your local fire department and ask if they have a juvenile firesetters intervention program. Don't assume the child will 'grow out of it.' Juvenile firesetting is dangerous and must be addressed.
- Smoking parents should keep their lighter on their person at all times, not on the table or in a purse.

Many Smokers Disable Child Resistant Feature on Lighters

When the child-resistant lighters were introduced, the fire prevention community believed that most young children would be unable to use these lighters and therefore they would be safer from fire. Unfortunately, many adults also found the child-resistant features to be cumbersome and disabled the mechanisms. Consequently, children still have access to lighters they can operate. The U.S. Consumer Product Safety Commission urges people to buy lighters that are easy for adults to use without removing the protective mechanism.

If you see illegal lighters for sale that have no child resistant mechanism, immediately inform the local fire chief or the U.S. Consumer Product Safety Commission.

Dryer Fires

Lack of Maintenance Caused 29% of Dryer Fires

Two hundred ninety-five (295) dryer fires caused nine civilian injuries, eight firefighter injuries, and an estimated dollar loss of $1.5 million. The average dollar loss per fire was $5,198. Of these 295 fires, 236, or 80%, occurred in residential occupancies.

Twenty-seven percent (27%) of the dryer fires were caused by a lack of maintenance or a failure to clean the equipment; 15% were caused by operational deficiencies; 12% were caused by unclassified mechanical malfunctions; 9% were caused by combustibles being too close to heat; and 6% were caused by part failures, leaks, breaks, or control failures.

Twenty-one percent (21%) of the 295 dryers involved in fires were identified as gas-fueled by the form of heat of ignition. Nineteen percent (19%) of dryer fires identified the form of heat of ignition as heat from properly operating electrical equipment. Twenty-eight percent (28%) of dryer fires identified the form of heat of ignition as coming from a defective, broken or malfunctioning piece of electrical equipment.

Sixty percent (60%) of the dryer fires occurred in one- and two-family homes; 17% occurred in apartments; 6% occurred in professional supplies or services properties; 3% occurred in nursing homes or rest homes; 2% occurred in hotel and motels and 2% occurred in hospitals.

However, the rank among the fire causes in these occupancies is very different. Dryers caused 4% of the fires in one- and two-family homes, 1% of the apartment fires, 40% of the fires in professional supplies or services properties, 9% of the fires in nursing homes and 6% of the fires in hotels and motels.

The public should be reminded to clean the dryer filter screen after each load of laundry, to clean the outside vents twice a year and to occasionally vacuum the motor area of the dryer. If materials such as cooking oil, solvents and other combustible or flammable liquids were not removed completely during the laundry cycle, heat from the dryer may cause them to ignite. This is the reason that mop heads should not be put into the dryer. Someone should be at home whenever the dryer is in use and the home should have working smoke alarms.

Two Dryer Fires Caused $350,000 In Losses

- On Wednesday February 2, 2000 at 3:36 p.m. the Everett Fire Department was called to a fire in a two-family home caused by a dryer. A malfunctioning part inside the machine started the blaze that caused an estimated dollar loss of $200,000. It was undetermined if smoke detectors were in the home. There were no casualties associated with this fire.

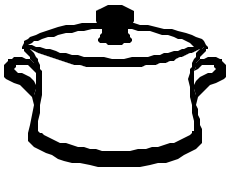
- On Friday October 27, 2000 at 2:03 p.m. the Carlisle Fire Department was called to a fire in a single-family residence caused by an electrical failure inside the dryer. The damages from this fire were estimated to be $150,000. Smoke detectors were present in the home but did not operate. There were no casualties associated with this fire.

Cooking Fires

Cooking Caused 3,606 Fires, 2 Civilian Deaths, 142 Civilian Injuries

Unattended cooking, other unsafe cooking practices and defective cooking equipment caused 3,606 fires, two civilian deaths, 142 civilian injuries, 43 firefighter injuries and an estimated dollar loss of $7.5 million. The average dollar loss per fire was $2,087. Cooking fires accounted for 14% of the total 24,931 fires that occurred in 2000.

Ninety-two percent (92%) of the fires caused by cooking occurred in structures. The 3,606 fires included: 3,322 structure fires; 69 outdoor fires involving property of value; 36 outside spills or leaks with ensuing fires; 12 brush fires, nine motor vehicle fires; nine trash fires; four explosions (involving the improper start-up or shut down of ovens); and 145 fires that could not be classified further.



Unattended Cooking Starts 54% of Cooking Fires- Stand by Your Pan!

Fifty-four percent (54%) of these fires were caused by unattended cooking; 6% of the fires started because the cooking equipment was not properly cleaned or maintained; 6% were caused by combustibles left too close to the cooking equipment; part failures, leaks or breaks caused 3% of the fires; 3% started when the equipment was accidentally turned on or not turned off; abandoned or discarded cooking materials accounted for 2%; and 2% were caused by people falling asleep while cooking. Human error was responsible for the majority of these fires. A little more than 13% of these incidents were blamed on mechanical failures or installation deficiencies.

Cooking Was the Leading Cause of Injury in Fires in 2000

Cooking was the leading cause of injury in fires in 2000. This is not surprising considering that one-half of residential structure fires start in the kitchen. Of the cooking fire injuries where gender is known, 57% of victims were female and 43% were male. Of the 94 victims where age is known, 1% of victims were under age 10; 10% of victims were between the ages of 10-14; 9% were 15-24; 22% were 25-34; 22% were 35-44; 11% were 45-54; 10% were 55-64; 9% were 65-74; 3% were 75-84 and 4% were over age 85.

44% of Victims in Room or Space of Fire Origin
Of the cooking fire injuries where location at ignition is known, 17% were intimately involved with the ignition; 27% of victims were in the room or space of fire origin; 11% were on the same floor as origin of fire; 18% were in the same structure of origin and 5% were on the property of fire origin at the time of ignition.

Over 1/2 of Cooking Injuries Occurred When Trying to Control Fire
Of the cooking fire injuries for which activity at time of injury was known, 63% of victims were trying to control the fire; of the 64 victims injured while attempting to control the fire 63% were male. Fourteen percent 14% were escaping; 14% were sleeping; 4% were unable to act; 3% were acting irrationally and 2% were attempting a rescue.

Almost 1/2 of All Cooking Injuries Were Burns
Of the cooking fire injuries where nature of injury was known, 47% of victims suffered only from burns; 32% suffered only from smoke inhalation or asphyxia; 18% burns and asphyxia; 2% complaints of pain; dislocation or fractures injured 1% of these victims and another 1% of injuries was caused by wounds, cuts or bleeding.

Cooking Third Leading Cause of Deaths
Two fatal cooking fires caused two fire deaths in 2000. Cooking caused 4% of fatal fires and 4% of fire deaths in 2000. One of the cooking fire victim's clothing caught fire and this was the specific cause of the fire. The importance of responding correctly to a clothing ignition – stop, drop and roll – cannot be overemphasized. Older adults, who often are more afraid of falling than of fire, are the most common victims of cooking fires. They must be persuaded that they can indeed safely lower themselves to the ground and roll to smother the flames.

- On May 24, 2000 the Turners Falls Fire District was notified that one of its residents had died at the University of Massachusetts Medical Center in Worcester, MA, after having been treated at that facility for burn injuries suffered at his home on May 3, 2000. The fire department was never notified of the fire until after the death of the victim. The victim, a 74-year old male, was burned when his shirt ignited when he leaned next to the gas stove. He fell to the floor and his son-in-law patted down the flames, receiving first and second degree burns to his hands as well. The victim's daughters transported both to the Franklin Medical Center. The elderly fire victim also seemed to suffer from Alzheimer's disease.

- On July 6, 2000 at 2:07 a.m. the Fall River Fire Department was called to a fire in a single-family home caused by unattended cooking materials. The victim, a 47-year old male, was asleep at the time the fire ignited and was overcome by its heat and smoke. He died from burns and smoke inhalation. There were no smoke detectors present in the building. The estimated damages from this fire were $8,000.

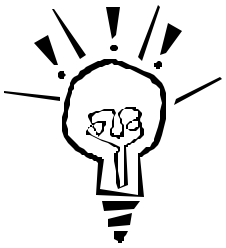
Cooking Safety

- Put a lid on a grease fire to smother it then turn off the heat. Baking soda will also work.
- Wear short or tightfitting sleeves when cooking. Loose sleeves easily catch fire.
- Never throw water on a grease fire. Water will only spread the fire around.
- Never move a burning pan. You can too easily ignite your clothes or spill the fire onto someone or something else.
- Stand by your pan! Never leave cooking unattended.
- Stop, drop and roll if clothing ignites, no matter how young or old.

Electrical Equipment Fires

597 Fires, 30 Civilian Injuries, 64 Fire Service Injuries

Local fire departments reported that there were 597 structure fires caused by problems with electrical equipment in Massachusetts in 2000. These fires caused 30 civilian injuries, 64 fire service injuries and an estimated dollar loss of $11.1 million. The average loss per fire was $18,680.



The following table shows electrical fires by equipment involved. The most common equipment involved in ignition in these fires was light fixture, ballast, accounting for 24% of the fires.

ELECTRICAL EQUIPMENT FIRE STATISTICS

Equipment	# of Fires	% of Elec. Eq.	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
Light fix., ballast, sign	141	24%	15	6	0	0	$2,558,115
Fixed wiring	130	22%	24	1	0	0	3,490,800
Cord, plug	76	13%	7	1	0	0	1,483,580
Switch, receptacle, outlet	59	10%	4	0	0	0	542,405
Lamp, light bulb	57	10%	2	5	0	0	485,601
Power switch gear	29	5%	2	14	0	0	573,913
Transformer	19	3%	0	0	0	0	93,600
Meter, meter box	11	2%	0	0	0	0	101,000
Unclassified	75	4%	6	0	0	0	1,822,730
Total	**597**	**100%**	**64**	**30**	**0**	**0**	**$11,151,744**

Light Fixtures Involved in 141 Fires
Light fixtures, ballasts or signs were involved in 141, or 24%, of electrical equipment fires during 2000. This is a 13% decline from the 162 incidents reported in 1999. These fires caused six civilian injuries, 15 fire service injuries and an estimated dollar loss of $2.5 million. The average loss per fire was $18,143.

130 Fixed Wiring Fires Caused $3.4 Million in Damages
Fixed wiring was involved in 130, or 22%, of the electrical equipment fires in 2000. This is an 18% decrease from the 158 incidents reported in 1999. These fires caused one civilian injury, 24 fire service injuries and an estimated dollar loss of $3.4 million. The average dollar loss per fixed wiring fire was $26,852.

76 Cord or Plug Fires Caused 7 Fire Service Injuries
Seventy-six (76), or 13%, of the structure fires involving electrical equipment were caused by cords or plugs. This is a 14% drop from the 88 incidents reported in 1999. These fires caused one civilian injury, seven fire service injuries and an estimated dollar loss of $1.48 million. The average dollar loss per fire was $19,521.

59 Switches, Receptacles, Outlet Fires
Fifty-nine (59) electrical equipment fires involving switches, receptacles, and outlets caused four firefighter injuries and an estimated dollar loss of $542,405. This is a 13% decline from the 68 incidents reported in 1999. These fires accounted for 10% of the structure fires involving electrical equipment. The average dollar loss per fire was $9,193.

Lamps or Light Bulbs Caused 57 Structure Fires; 5 Civilian Injuries
Lamps or light bulbs were involved in 57, or 10%, of the 597 electrical equipment fires in structures. This is a 10% drop from the 63 incidents reported in 1999. These fires caused five civilian injuries, two fire service injuries and an estimated dollar loss of $485,601. The average loss per fire was $8,519. This is a 10% decrease from the 63 incidents reported in 1999.

Power Switch Gear, Overcurrent Protection Caused 29 Fires, 14 Civilian Injuries
Power switch gear or overcurrent protection devices were involved in 29, or 5%, of the electrical fires. This is a 22% decrease from the 37 incidents reported in 1999. These fires caused 14 civilian injuries, two firefighter injuries and an estimated dollar loss of $573,913. The average loss per fire was $19,790.

19 Transformer Fires in 2000
Nineteen (19) fires, or 3%, involving transformers or associated overcurrent or disconnect equipment caused an estimated dollar loss of $93,600. This is a 46% increase from the 13 incidents reported in 1999. The average loss per fire was $4,926.

Meter, Meter Boxes Were Involved in 11 Fires
Meters and meter boxes caused 1, or 2%, of the 597 electrical equipment structure fires in 2000. This is a 120% increase from the five incidents reported in 1999. These 11 fires caused an estimated $101,000 in damage. The average dollar loss was $9,182.

Power Switchgear Fire Causes 13 Injuries in Whitman Junior High School
On Wednesday February 16, 2000 at 9:26 a.m. the Whitman Fire Department was called to a fire at the local junior high school. The fire began in the switchgear area of the school. A short circuit in the switchgears caused an arc, continuing to melt the wire insulation and ignited some nearby plastic covering. There were 13 civilian injuries reported. All of the injuries were school children complaining of internal pain. Smoke or heat detectors were present in the area of origin but the fire was too small to activate them. Sprinklers were not present. Damages from this fire were estimated to be $10,000.

Watch For Warning Signs
People should watch for warning signs of electrical problems. These include:

- Fuses blowing frequently.
- Unusually warm or faulty outlets or switches.
- A vague smell of something burning.
- A sizzling sound in the wall.
- Light bulbs that wear out too fast.

Any of these signs may indicate a potential problem. Contact a licensed electrician if you notice any of these signs.

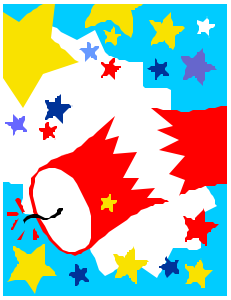
Fuses are safety devices. They blow when the amount of current cannot safely travel through the wires. *Trying to bypass the fuse protection is an invitation to danger.*

Electrical Systems Pose Unseen Dangers
Just as all systems need maintenance and inspection, so does electrical wiring. As switches, receptacles and connections age, heat is generated and the risk of fires inside walls and at poor connections greatly increases. Because wiring is often hidden behind walls, electrical faults may be hard to detect except by properly trained electricians.

Have electrical systems examined by a licensed electrician every 10 years. A good electrician will look for electrical faults, check for warm switch plates and receptacles, and analyze the use of electricity to see if additional capacity is needed.

Fireworks Incidents

39 Incidents Involving Fireworks in 2000



According to the 2000 Massachusetts Fire Incident Reporting System (MFIRS) data, there were 39 incidents reported that involved fireworks, a 26% drop from 53 incidents reported in 1999. Two firefighters were injured in these incidents and there was an estimated $96,056 in property damages. The average dollar loss per fireworks incident was $2,463. Almost half of the fireworks-caused fires in 2000 took place during the week of 4th of July. Half of the fireworks incidents were brush fires, while one-fifth were structure fires.

- On Tuesday July 4, 2000 at 9:34 p.m. the Cambridge Fire Department was called to a structure fire in a small apartment building. The fire was started on an exterior wall, ignited by the use of illegal fireworks. It quickly spread to the remainder of the structure. There were no smoke detectors present inside the building. One firefighter was injured battling this fire. Damages from this blaze were estimated to be $80,000.

Refer to M-BIRS Annual Report for More Information about Fireworks Injuries

For more information about the causes of burn injuries, please refer to the *Massachusetts Burn Injury Reporting System —2000 Annual Report.* According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person's body surface area must be reported immediately to the State Fire Marshal. All burn reports received by the Office of the State Fire Marshal are reviewed for possible suspicious circumstances. Gasoline burns, burns on the hands and arms or other unusual scenarios are referred for further investigation.

M-BIRS reported 10 fireworks-related burn injuries in 2000. Nine of the ten were males. Of these nine, two were under the age of five, four were between the ages of 12 and 15, all during the months between February and May, and the last three were adults injured during the week of the 4th of July. The tenth victim was a 21-year old female injured the day before the 4th of July.

Grill Fires

104 Incidents Involving Grills in 2000

In 2000, there were 104 fire and explosion incidents reported to the Massachusetts Fire Incident Reporting System (MFIRS) involving open fired grills. These incidents caused three civilian injuries, two firefighter injuries and an estimated dollar loss of $222,882. Predictably, 76% of these incidents occurred in the months of May to September when people are most likely to use their outdoor grills.

Gas Grill Fires

Of the 104 grill incidents, 39, or 38%, of the grills were gas grills. The other 62% of the grills were not specified as to the type of fuel; they were most likely a combination of charcoal grills and more gas grills. LP-gas grill fire incidents injured two civilians and caused an estimated $102,587 in damage. Eighty-five percent (85%) of the LP-gas grill fires in Massachusetts occurred between May and September.

Refer to MBIRS Annual Report for More Information about Grill Injuries

For more information about the causes of burn injuries, please refer to the *Massachusetts Burn Injury Reporting System — 2000 Annual Report.* According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person's body surface area must be reported immediately to the State Fire Marshal. Eight civilians were reported to M-BIRS in 2000 with burn injuries related to grills. Seven of the eight occurred between May and September.

- On Saturday October 21, 2000 at 8:38 p.m. the Quincy Fire Department was called to a fire where a grill located near the exterior wall ignited the one-family home. The fire spread to the entire structure. One firefighter was injured in the fire. Smoke alarms in the home operated. The estimated property loss of this incident was $100,000.

Grill Safety

Follow these safety tips when using a grill:

- Use all barbecue grills away from the house in the backyard.
- Supervise children whenever any grill is in use.
- Never use gasoline on any grill!

Gas Grill Safety

- Keep all LP-gas outside, three feet away from building openings such as doors, windows, dryer vents and air intake vents. Gas grill containers must be kept at least five feet away from possible ignition sources such as air conditioners, compressors,

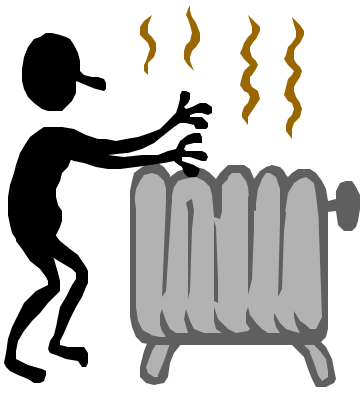
cars, and pilot lights. It is recommended LP-gas canisters be ten feet away from the house, if possible, especially when in use.
- LP-gas grills are not permitted inside or on balconies above the first floor of any building where people live.
- LP-gas is heavier than air and sinks. A leaky grill could pose a hazard to people below.
- Make sure all connections are tight and secure.

Section 5a of 527 Code of Massachusetts Regulation 6:07 states "…Storage or use of LP-Gas containers above the first floor of a building used for habitation is prohibited…" The reason for this is that LP-Gas is heavier than air and will sink. A spark from below could ignite gas that has leaked.

Charcoal Grill Safety
- Use only charcoal lighter fluid to start charcoal grills.
- Once the coals have been lighted, never add more lighter fluid to the fire — flames may travel up the stream of lighter fluid resulting in serious burns.
- Dispose of hot or smoldering coals properly. Place in a non-combustible container for at least 24 hours after you have stopped grilling.

Heating Equipment Fires

969 Fires, 14 Civilian Deaths, 33 Civilian Injuries, 48 Fire Service Injuries



Massachusetts fire departments reported that some form of heating equipment was involved in 969, or 9%, of the 10,279 structure fires in 2000. These heating equipment fires caused 14 fire deaths, 33 civilian injuries, 48 fire service injuries, and an estimated dollar loss of $6.7 million. The average loss per fire was $6,931.

Only one type of equipment per fire incident may be reported to MFIRS. Consequently, the totals for specific types of equipment, should, in many cases, be considered underestimates. For example, sparks from a wood stove may ignite a fire in the chimney. The recorded equipment involved might be either the chimney or the wood stove. When a fire results from an extension cord overloaded by the demands of a portable heater, the extension cord might be recorded instead of the heater.

The following table shows the number of fires caused by each type of heating equipment, the percentage of heating equipment fires for each type of equipment, the number of civilian deaths, civilian injuries, fire service deaths, fire service injuries and the estimated dollar loss for each type of heating equipment.

HEATING EQUIPMENT FIRES

Equipment	# of Fires	% of Heat Eq.	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
Central heating unit	301	31%	3	4	0	0	$853,158
Fixed heater, woodstove	220	23%	7	6	0	2	1,979,051
Indoor fireplace	139	14%	6	5	0	1	1,065,910
Chimney, gas vent flue	71	7%	1	0	0	0	357,872
Chimney connector	58	6%	2	0	0	0	560,155
Water heater	53	5%	1	0	0	0	193,337
Portable heater	47	5%	23	17	0	10	1,328,370
Heat transfer system	18	2%	2	1	0	0	136,801
Unclassified	62	6%	3	0	0	1	241,785
Total	**969**	**100%**	**48**	**33**	**0**	**14**	**$6,716,439**

Heating Equipment Fires Killed 14 Civilians in 9 Fatal Fires in 2000

Fires involving heating equipment claimed the lives of 14 civilians in nine fires in 2000. These 14 victims accounted for 25% of the total residential structure fire deaths. The nine fatal fires accounted for 19% of the total fatal residential structure fires in Massachusetts.

Space heater fires were the deadliest fires in Massachusetts during 2000. Five fires involving space heaters caused 10 deaths. In 2000, there was one death for every 4.7 space heater fires.

- On January 21, 2000 at 8:57 p.m. the Lowell Fire Department was called to a fatal fire in a three-decker. The cause was determined to be storing combustibles too close to a heat source. The victims, a 3-year old girl and a 37-year old man, were trapped by the fire while escaping and overcome by heat and smoke. They both died from burns and smoke inhalation. There were eight other civilian injuries associated with this fire, and no estimation as to the dollar loss.

- On March 17, 2000 at 12:30 a.m. the Hingham Fire Department was called to a fatal fire in a single-family house caused by hot embers from an indoor fireplace in the living room. The ensuing fire blocked the victim, a 69-year old male, from his intended escape route. He was overcome by the heat and smoke generated by the fire and died from smoke inhalation. Damages from this blaze were estimated at $200,000. Smoke detectors were present in other areas of the house but they failed to operate. One firefighter was also injured at this fire.

- On April 6, 2000 at 5:30 a.m. the Lanesborough Fire Department was called to a fatal fire in a single-family home caused by a plugged furnace flue. The victim, a 76-year old man, was sleeping when the fire started and was overcome by the smoke and heat generated by the fire while he was trying to escape. No smoke detectors were present in the building. There was no estimation as to the dollar loss of this fire.

- On May 8, 2000 at 7:13 p.m. the Billerica Fire Department was called to a fatal fire in a single-family home. The structure had no electricity or water. The victim, an 83-year old male, was discovered in the kitchen. He was apparently overcome by the heat and smoke generated by the fire. It is believed that the heat from the wood stove ignited multiple materials in the kitchen. The victim died from burns and smoke inhalation. There was no estimate of the dollar loss incurred by this fire. There were no smoke detectors in the residence.

- On October 8, 2000 at 3:29 a.m. the Ludlow Fire Department was called to a fire in a mobile home caused by the improper use and installation of a kerosene heater. The heater had been installed in the living room near an exterior wall and had been vented through the same wall with a single wall sheet metal chimney. Heat generated by the kerosene heater ignited nearby combustibles. The victim, a 51-year old man, was overcome by smoke while still asleep. No detectors were present inside the mobile home. Damages from this fire were estimated to be $10,000.

- On November 22, 2000 at 9:23 a.m. the Boston Fire Department was called to a fatal fire in an apartment building that was caused by a portable space heater being too close to combustibles in a bedroom. The victim, an 84-year old woman, was unable to escape fast enough and was overcome by the heat and smoke generated by the fire. She died as a result of smoke inhalation. Smoke detectors were present and operating. The damages from this fire were estimated to be $250,000. There was one fire service injury at this fire.

- On November 24, 2000 at 2:54 a.m. the Whitman Fire Department was called to a multiple fatal fire in a single-family home that was caused by a portable space heater too close to combustible paper products in the living room. The three victims were a 49-year old male, a 51-year old female and a 78-year old female. All three were asleep and were overcome by the smoke generated by the fire. They died of burns and smoke inhalation. No smoke detectors were present in the home. The damages from this fire were estimated to be $250,000. No one else was injured in this fire.

- On November 25, 2000 at 3:08 a.m. the Boston Fire Department was called to a fatal fire in a single-family home caused by a portable heating unit in a crawl space. The victims, 4-year old and 10-year old boys, were sleeping when the fire ignited. They were overcome by the smoke while they slept and died from smoke inhalation. Smoke detectors were present but not in the area of fire origin and the one's that were present did not work. The damages from this fire were estimated to be $250,000. Four firefighters were also injured battling this blaze.

- On December 14, 2000 at 5:15 a.m. the Fall River Fire Department was called to a fire in an apartment building caused by an overloaded extension cord that was attached to a space heater which claimed the lives of a 10-year old girl and a 36-year old woman. Smoke detectors were present and operated. Damages from this blaze are estimated to be $40,000. One firefighter was injured in this fire.

Central Heating Units

301 Fires, 4 Civilian Injuries, 3 Fire Service Injuries
Central heating units were involved in 301 structure fires in 2000. These fires caused four civilian injuries, three fire service injuries and an estimated dollar loss of $853,158. The average loss per fire was $2,834.

Of the 301 central heating unit fires where cause was known, automatic control failures caused 44% of these fires; 15% were caused by a lack of maintenance or failure to clean the equipment; 9% were caused by part failures, leaks, or breaks; 7% resulted from backfires; and 6% of these fires were caused by someone placing combustibles too close to the unit. Ten fires involving central heating units did not have a further cause determination. These were excluded from the percentage calculations.

One hundred eighty-seven (187), or 62%, of the 301 central heating unit fires were caused by liquid-fueled equipment. These fires caused one civilian injury, three fire service injuries, and an estimated dollar loss of $485,338. The average loss per fire was $2,595.

Thirty-four (34), or 11%, of the central heating unit fires were caused by gas-fueled equipment. The form of heat of ignition was used to identify gas- and liquid-fueled equipment. These fires did not cause any injuries but did cause an estimated dollar loss of $69,600. The average loss per fire was $2,047.

Furnaces Should Be Cleaned and Checked Annually
Homeowners should have furnaces cleaned and checked annually to ensure that they are working well. Combustible materials such as trash or supplies should never be stored near heating equipment. Only licensed tradespeople may install oil, gas, or electric heating units. Regulations about oil burners may be found in 527 CMR 4.

Fixed Heater Fires

220 Fires, 2 Civilian Deaths, 6 Civilian Injuries, 7 Fire Service Injuries
Two hundred twenty (220) fixed heater structure fires caused two civilian deaths, six civilian injuries, seven fire service injuries and an estimated dollar loss of $2 million. The average dollar loss per fire was $8,995.

33% of Fixed Heater Fires Caused by Lack of Maintenance
One-third, or 33%, of fixed heater fires were caused by a lack of maintenance or failure to clean the equipment. These fires caused one firefighter injury and $120,250 in damages.

Wood or Coal Stoves Caused 86 Fires, 1 Death and 31 Injuries
When the form of heat of ignition was listed as solid-fueled equipment, the fixed heater was assumed to be a wood or coal stove. Eighty-six (86) fire incidents in 2000 involved wood or coal stoves. These fires caused one civilian death, three civilian injuries, three

fire service injuries and an estimated dollar loss of $564,150. The average loss per fire was $6,560. Fifty-five percent (55%) of these fires were caused by lack of cleaning or maintenance. Two-thirds, or 66%, of these incidents started in the chimney area.

Install Wood Stoves According to Building Code Standards
A homeowner must obtain a building permit prior to installing a wood or coal stove and the installation must be inspected upon completion. In general, the stove should be at least three feet away from walls, ceilings and furnishings. If the flue does not draw properly, deadly levels of carbon monoxide may accumulate in the home.

- Keep the temperature within the manufacturer's suggested range. Wood and coal stoves should be operated at moderate heat. If the fire is too low, creosote, a black tarry fire by-product, may accumulate in the chimney and eventually cause a fire. If the fire is too hot, nearby combustibles or creosote in the chimney could ignite.

- Only burn fuels intended for use in these stoves. Other items may cause overheating and the release of toxic gases. Never use gasoline or flammable liquids to stoke the fire — doing so could cause an explosion.

- Have your chimney cleaned and inspected for creosote build-up before each heating season, and check it at least once a month during the season.

- Place ashes in a covered metal container until they are completely cool. Store outdoors, away from the house, porch or other outside buildings. Hot ashes may stay "live" for 24 hours.

- Use only one imitation log at a time.

Chimney Fires

129 Fires Caused 3 Fire Service Injuries
One hundred twenty-nine (129) structure fires involved chimneys, gas vent flues, chimney connectors or vent connectors. These 129 fires caused three fire service injuries and an estimated dollar loss of $918,027. The average dollar loss per fire was $7,116. Forty-two percent (42%) of these fires were caused by a creosote build-up or lack of maintenance; 19% were caused by construction, installation, or design deficiency; and 9% were caused by operational deficiencies.

Have Chimneys Cleaned Annually to Remove Creosote
Creosote is a black, tar-like by-product of fire. It can accumulate in your chimney and cause a fire. Have your chimney cleaned at the start of each heating season and check it monthly for soot build-up. It should also be checked for loose mortar. If you use a wood or coal stove, keep the temperature in the recommended range. Use chimney guards to prevent animals from nesting in your chimney. If you should have a chimney fire, have the chimney inspected by a professional before using it again.

Fires Caused by Fireplaces

139 Fires, 1 Civilian Death, 5 Civilian Injuries, 6 Fire Service Injuries
One hundred thirty-nine (139) fireplaces were involved in Massachusetts structure fires in 2000. These fires caused one civilian death, five civilian injuries, six fire service injuries and an estimated dollar loss of $1.06 million. The average dollar loss per fire was $7,668.

Fifty-one percent (51%) of the fires in which fireplaces were involved originated in the chimney. A lack of maintenance or the failure to clean the equipment caused 35% of the 139 fireplace incidents; 27% were caused by construction, installation or design deficiencies; and 17% were caused by operational deficiencies. Nine fires in which fireplaces were involved had undetermined causes. These nine were left out of the calculations.

Space Heater Fires

47 Fires, 10 Civilian Deaths, 17 Civilian Injuries, 23 Fire Service Injuries
Forty-seven (47) space heater fires caused 10 civilian deaths, 17 civilian injuries, 23 firefighter injuries and an estimated dollar loss of $1.3 million. The average dollar loss per fire was $28,263. Forty-four percent (44%) of these fires were caused by combustible materials such as bedding, rubbish, or furniture that were too close to the heater; 7% were caused by lack of maintenance; and another 7% were caused by attempting to thaw pipes.

Twenty-six percent (26%) of the portable heaters involved in fires were electric; 13% were gas fueled; and 6% were liquid fueled. The type of heater was determined from the form of heat of ignition.

In 2000, there was one fire death for every 4.7 space heater fires.

If you must use a space heater for heat, use it as safely as possible.

- When buying a heater, look for one that has been tested and labeled by a nationally recognized testing company.
- Keep the heater away from drapes, furniture or other flammable materials. Place it on a level surface away from areas where someone might bump it and knock it over.
- If you must use an extension cord, make sure it is a heavy-duty cord marked with a power rating as least as high as that on the label of the heater itself. (These are usually orange colored.)
- Never leave a space heater unattended or running while you sleep.
- Keep electric heaters away from water. Never use them near a sink or in the bathroom.

- Do not use space heaters to thaw pipes. They were not designed for this task. Space heaters must be kept at least 3 feet away from any combustibles including walls and wall coverings.

According to MGL Chapter 148, Section 5A, 25A and 25B, the sale and use of all liquid-fired (kerosene) unvented space heaters are illegal in Massachusetts.

Fires Caused by Hot Water Heaters

53 Fires, 1 Fire Service Injury
Fifty-three (53) structure fires were caused by hot water heaters in 2000. These 53 fires caused one firefighter injury and an estimated dollar loss of $193,337. The average dollar loss per fire was $3,648. Combustibles placed too close to the water heater caused 26% of the fires; another 26% resulted from short circuits and other electrical problems; 10% resulted from part failures, leaks, or breaks; and another 10% from automatic control failures.

Thirty-seven percent (37%) of the 53 fires involving hot water heaters were identified as gas-fueled by form of heat of ignition.

Fires Caused by Smoking

Smoking Caused 5% of Fires and 1/3 of Deaths
During 2000, 1,281, or 5%, of the 24,931 reported incidents were caused by the improper use or disposal of smoking materials. These 1,281 caused 19, or 34%, of the 79 civilian deaths, 81 civilian injuries, 62 fire service injuries, and an estimated dollar loss of $9.3 million. The average dollar loss per fire was $7,324. The number of smoking fires decreased by 20% from 1999 to 2000.

All Fires From Smoking Down 20%
The 1,281 fires caused by smoking included: 556 structure fires, down from 580 in 1999; 57 motor vehicle fires, down from 62 in 1999; 404 tree, brush or grass fires, down from 664 in 1999; 167 trash or rubbish fires, down from 178 in 1999; 72 outside fires involving property of value, down from 97 in 1999; one spill or leak with an ensuing fire the same as in 1999 and 24 fires that could not be classified further, down from 26 in 1999. The number of fires caused by smoking has decreased 20% from 1999 to 2000.

Smoking Caused Over 1/3 of Fatal Fires, 18 Deaths
The 556 smoking-related structure fires caused 18 of the 19 smoking-related fire deaths, 79 civilian injuries, 59 fire service injuries, an estimated dollar loss of $9.1 million and an

average dollar loss of $16,488. The eighteenth victim died on the front steps of the Springfield Housing Court. Smoking fires accounted for 36% of the fatal fires in 2000.

Of the 556 smoking-related structure fires, 444 occurred in residences. Smoke detectors operated in 53% of the smoking-related residential structure fires where detector status was known. There were no working detectors in an additional 25% of these incidents. No smoke detectors were present in 18% of incidents. In 4% the fire was too small to activate the smoke detector. The leading areas of origin were the bedroom where 25% of residential smoking fires occurred, the living room, where 14% started and outside balconies or porches, where 11% of the fires occurred.

Smoking Remains the Leading Cause of Fire Deaths

In 2000, the improper use and disposal of smoking materials caused 19 fire deaths in 18 fatal fires. The unsafe and improper use of smoking materials caused 34% of residential structure fire deaths and 38% of fatal residential structure fires. Almost one-third of the 26 older adult deaths in residential structure fires were caused by smoking. In 1999, 10 people died in 10 smoking-related fires. Although the number of smoking related fires are on the decline, smoking fires are still responsible for the most fatalities.

In 17% of these deaths, there were no working smoke detectors; 11% of the deaths occurred where smoke detectors did not operate and 6% of deaths occurred where there were no detectors present at all. Thirty-four percent (34%) of smoking fire deaths occurred in structures where smoke detectors were present and operated, however two-thirds of these victims were intimately involved in ignition. The smoke detectors helped prevent these fires from claiming any additional lives. Fifty percent (50%) of smoking-related deaths occurred where smoke detector status was unreported.

- On January 21, 2000 at 5:12 a.m. the Worcester Fire Department was called to a fire in a two-family home caused by the improper use and disposal of smoking materials. The 99-year old male victim was sleeping when an abandoned cigarette ignited upholstered furniture. The victim died from burns and smoke inhalation. The fire caused $50,000 worth of damage. Smoke detectors were present and operated in this fire.

- On January 29, 2000 at 7:22 p.m. the Holbrook Fire Department was called to a fire in a single-family home caused by the improper disposal of smoking materials. The fire began in the living room on an upholstered piece of furniture. The victim, an 88-year old male, was found on the kitchen floor. He was overcome by the heat and smoke generated by the fire and died from smoke inhalation. Damages were estimated to be $80,000. No one else was injured in this blaze.

- On February 6, 2000 at 1:16 p.m. the Springfield Fire Department was called to a fire in a duplex caused by improper disposal of smoking materials. The victim, a 45-year old man, was overcome by the heat and smoke generated by the fire. He died from burns and smoke inhalation. No other injuries were associated with this fire. Damages from this blaze were estimated to be $30,000.

- On February 12, 2000 at 1:48 a.m. the Medford Fire Department was called to a fire in a two-family home caused by improper disposal of smoking materials. The victim, a 58-year old male, died from burn injuries sustained in the fire. The fire was started when a cigarette came into contact with the sofa igniting its fabric. Damages from this blaze were estimated to be $195,000. Two firefighters were injured fighting this fire.

- On March 6, 2000, at 11:27 a.m. the Worcester Fire Department was called to a fire in an apartment building caused by the careless disposal of smoking materials. The victim, a 60-year old female, was overcome by the heat and smoke and died from burns and smoke inhalation. Damages from this blaze were estimated to be $10,000. Smoke detectors were present, operated, and alerted the other residents to the danger. No other injuries were associated with this fire.

- On March 15, 2000 at 2:11 a.m. the Northbridge Fire Department was called to a multiple fatal fire in a five-unit apartment building with an attached business, caused by the improper disposal of smoking materials. The victims, a 46-year old female and 50-year old male, were asleep when the fire started and subsequently had their escape route blocked by the ensuing fire. They were overcome by the heat and smoke and died from burns and smoke inhalation. Damages from this blaze were estimated to be $125,000. One firefighter received a minor cut during the overhaul phase of this incident.

- On March 17, 2000 at 7:13 a.m. the Hopedale Fire Department was called to a fatal fire in a single-family home caused by the unsafe disposal of smoking materials. The victim, a 76-year old female, was sleeping when a discarded cigarette ignited material in her bedroom. She was able to escape, however she died later from burns and smoke inhalation. Smoke detectors were present in the home and did alert the other two occupants to the danger. They were treated for smoke inhalation at a local hospital. Damages from this blaze were estimated to be $75,000.

- On March 24, 2000 at 12:09 a.m. the Springfield Fire Department was called to a fire in a single-family home that was caused by unsafe disposal of smoking materials into the trash. The victim, a 38-year old man, was asleep when the fire started. While trying to escape, he was overcome by the heat and smoke generated by fire. He died from burns and smoke inhalation. No other injuries were associated with this fire. Damages from this blaze were estimated to be $40,000.

- On April 5, 2000 at 8:57 p.m. the Hamilton Fire Department was called to a fatal fire in a single-family house caused by improper disposal of smoking materials. The fire started when a cigarette ignited some furniture on an exterior balcony. The victim, an 84-year old male, was unable to escape and was overcome by the heat and smoke generated by the fire. He died from burns and smoke inhalation. Smoke detectors were not present in the room of origin and did not operate. One other person suffered injuries from smoke inhalation. Damages from this fire were estimated to be $75,000.

- On April 25, 2000 at 10:38 a.m. the Wakefield Fire Department was called to a fatal fire in a single-family home caused by improper disposal of smoking materials. The victim, a 45-year old female, was overcome by smoke in the kitchen. The fire begun by a cigarette in the living room eventually destroyed the house. Damages to the property were estimated to be $249,000. One firefighter was injured during the initial internal attack. He fell through a hole in the first floor and landed on his back on a piece of furniture in the basement.

- On June 1, 2000 at 4:36 a.m. the Yarmouth Fire Department was called to a fire caused by the unsafe disposal of smoking materials in a single family home that killed it's 35-year old male owner. Investigators believe that the victim was asleep at the time of the fire and possibly impaired by drugs or alcohol. The victim was trying to escape but the closest exit, the front door, was blocked by furniture and he was overcome by smoke and died from burns and smoke inhalation. Damages from this blaze were estimated to be $50,000.

- On July 1, 2000 at 6:22 a.m. the Yarmouth Fire Department was called to a fire in an three to six unit apartment building caused by the careless disposal of smoking materials. The 74-year old female victim fell asleep while smoking, was overcome by the smoke generated by the fire and died from burns and smoke inhalation. Smoke detectors were present and operating. Damages from the blaze were estimated to be $150,000.

- On October 6, 2000 at 5:20 p.m. the Stockbridge Fire Department was called to a fire in a single-family home caused when a cigarette ignited a chair cushion in an enclosed porch and quickly spread. The victim, a 74-year old female, was not able to escape the initial flames because the fire had progressed too rapidly. Smoke detectors were not present on the porch but were present inside the home, but failed to operate. Damages from this blaze were estimated to be $150,000.

- On November 15, 2000 at 7:22 a.m. the Woburn Fire Department was called to a fatal fire in an apartment building caused by smoking while on oxygen. The victim, a 73-year old woman, was using a portable oxygen tank while she was smoking. A match she had used to light her cigarette started the fire. She was unable to escape and was overcome by the heat and smoke generated by the fire. She died from burns and smoke inhalation. Smoke detectors were present and operating. There were no sprinklers present. There was no estimate of the dollar loss incurred by this fire.

- On December 8, 2000 at 3:02 a.m. the Scituate Fire Department was called to a fatal fire in a single-family home caused by the improper disposal of smoking materials. The victim, a 58-year old woman, fell asleep in the living room while smoking. She was overcome by the heat and smoke generated by the fire. Damages from this blaze were estimated to be $95,000.

- On December 8, 2000 at 11:35 a.m. the Mattapoisett Fire Department was called to a fatal fire in a single-family house caused by the improper disposal of smoking

material in the living room. It is believed that the victim, a 70-year old female, fell asleep while smoking. Ashes from the cigarette ignited the sofa. The victim awoke to the fire and went to the kitchen to get some water to extinguish the fire. Subsequent inspection during overhaul found the kitchen faucet turned on and a pan on the floor next to where the victim was found. The victim was overcome by the heat and smoke generated by the fire as she was found in a room untouched by the fire. She died from smoke inhalation. No detectors were present in the house. The fatigued firefighter who discovered the victim was taken to the emergency room as a precaution. There was no estimation as to the dollar loss incurred by this fire.

- On December 26, 2000 at 4:15 a.m. the Fall River Fire Department was called to a fire in an apartment building caused by the careless disposal of smoking materials. The fire started when the cigarette ignited the fabric of the bedding material. All the occupants of the building were asleep at the time of the fire. The victim, a 24-year old female was blocked from escaping by the fire. She later died from their burns. Smoke detectors were present and operated, saving the lives of five other occupants. There was one fire service casualty associated with this fire. Damages from this fire were estimated to be $700,000.

Smoking Fires Ignite Clothing, Sleepwear, Bedding & Upholstered Furniture
One-third, or 33%, of smoking fires first ignited clothing, bedding or upholstered furniture. If smokers were using self-extinguishing cigarettes, many of these deaths could have been avoided. Some tobacco companies have begun to sell self-extinguishing cigarettes in test markets. There is no federal standard for self-extinguishing cigarettes despite nearly 20 years of proposed legislation. The state of New York has recently passed legislation for self-extinguishing cigarettes and Massachusetts is considering such a standard for the Commonwealth.

Another safety aspect to think about is purchasing only upholstered furniture that meets the California flammability standard, because many smoking-related fires start by igniting upholstery.

Until they can quit, smokers should use deep ashtrays, store ashes in metal containers and never smoke in bed. Families should consider banning smoking inside the house for health and fire safety reasons. Children of smokers often have easy access to matches and lighters. Adults must keep these tools out of the reach of small children.

State regulations and federal regulations require most children's sleepwear to be flame-retardant. However, no such requirements apply to adult clothing. Physically disabled and elderly people may not be able to easily 'stop, drop and roll' if their clothing ignites.

While everyone needs at least one working smoke detector on every level of their home, this is even more important to smokers because of the high risk of fire death. Placing a detector inside every bedroom increases the probability that if a fire occurs, residents will wake up in time to escape. A cigarette accidentally left on a sofa, places the smoker and

everyone else in the building at risk. A smoke detector's warning may enable a smoker to live long enough to quit.

No smoking should ever be permitted in home where oxygen is in use. The oxygen-enriched environment increases the speed at which the fire will burn once it starts. Oxygen can saturate clothing, rugs, and upholstery, increasing the fire danger even when the home oxygen system is “turned off”.

Illegal to Throw Cigarettes Out Car Window
The improper disposal of smoking materials has been a major problem to the fire service for years. Massachusetts General Law Chapter 148 Section 54 states, “Whoever drops or throws from any vehicle while the same is upon a public or private way running along or near forest land or open fields, or, except as permitted by law, drops, throws, deposits or otherwise places in or upon forest land, any lighted cigarette, cigar, match, live ashes or other flaming or glowing substance, or any substance or thing which in and of itself is likely to cause a fire, shall be punished by a fine of not more than one hundred dollars or by imprisonment for not more than thirty days.”

Carbon Monoxide Incidents

In 2000, 144 fire departments voluntarily reported 2,250 carbon monoxide (CO) incidents; hazards (situation found 48) and carbon monoxide (CO) detector activations (situation found 75). A CO hazard is an identifiable carbon monoxide emergency whether or not a CO detector activated and the presence of CO was confirmed and some corrective action was indicated. Fire departments responded to some 895 CO hazard incidents that caused five civilian injuries and one firefighter injury.

The Town of Duxbury, with a population of 14,428, reported the most CO incidents in 2000, 225 CO calls. The next five cities in terms of the number of carbon monoxide calls reported were: Pittsfield, 87 calls; Springfield, 86 runs; Plymouth, 62 incidents; Franklin, 59 calls; and Worcester with 52 carbon monoxide incidents in 2000. Because the reporting of carbon monoxide incidents is voluntary, many large cities like Boston do not report them to the Office of the State Fire Marshal.

CO detector activation is when a CO detector activated in response to pollution, an unknown trigger or a non-threatening situation. Fire departments responded to 1,621 CO detector activation incidents that resulted in one firefighter injury.

According to the U.S. Consumer Product Safety Commission (CPSC), an acceptable level of CO is a 15 PPM average over a time span of eight hours or a 22 PPM average for an hour. If you have 1,000 PPM for over thirty minutes, it puts you at a high level of danger in the form of a collapse into a coma or permanent brain damage.

Only a gas meter can detect if carbon monoxide is present and in what quantities. Because you can't see it or smell it, you may not know that it is there. Human senses don't provide enough information. Finding little or no CO when the fire department arrives does not prove conclusively that no problem exists. An appliance may release large quantities of CO at one particular stage in its operation. Knowledgeable repair people must check out the equipment. Carbon monoxide is a by-product of combustion. It is one of the toxic gases produced in a fire. Many people falsely believe they will awaken to the smell of smoke. In fact, when a person falls asleep, so does their sense of smell. Carbon monoxide usually causes fatigue and will put someone into a deeper sleep so that people are less likely to awaken before their life slips away. This is why smoke detectors are so important.

The United States Consumer Product Safety Commission (CPSC) has produced a 'scratch and sniff' pamphlet on the *"Senseless" Killer*, to remind people that carbon monoxide has no taste or color. Sample copies are available from the Office of the State Fire Marshal.

Version 5 of the National Fire Incident Reporting System (NFIRS v5) will now be collecting data on carbon monoxide incidents, an idea that began and has been practiced in Massachusetts for quite some time.

Appendix

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Abington	96	35	15	46	0	0	0	0	$141,883
Acton	3	0	3	0	0	0	0	0	4,000
Acushnet	40	13	10	17	0	0	0	0	61,900
Adams	22	16	6	0	0	3	0	0	40,970
Agawam	128	41	22	65	0	3	0	2	523,975
Alford	5	3	2	0	0	0	0	0	31,000
Amesbury	10	4	2	4	0	0	0	0	16,360
Amherst	68	28	7	33	0	0	0	1	168,695
Andover	63	20	27	16	0	0	0	0	28,100
Aquinnah	Fire Department in Good Standing, Certified No Fires to Report								
Arlington	74	59	15	0	0	0	0	0	555,103
Ashburnham	38	14	3	21	0	0	0	1	52,500
Ashby	2	2	0	0	0	0	0	0	170,000
Ashfield	5	3	1	1	0	0	0	1	165,600
Ashland	26	22	1	3	0	1	0	0	231,120
Athol	79	33	8	38	0	4	0	1	234,166
Attleboro	140	23	42	75	0	1	0	0	165,107
Auburn	95	21	34	40	0	1	0	1	368,900
Avon	44	8	18	18	0	0	0	0	156,951
Ayer	29	15	4	10	0	2	0	0	103,275
Barnstable Fire Districts									
Barnstable	*22*	*3*	*8*	*11*	*0*	*0*	*0*	*1*	*23,159*
C.O.M.M.	*51*	*30*	*13*	*8*	*0*	*5*	*0*	*1*	*164,830*
Cotuit	*5*	*4*	*1*	*0*	*0*	*0*	*0*	*0*	*85,001*
Hyannis	*161*	*62*	*30*	*69*	*3*	*17*	*0*	*9*	*620,100*
West Barnstable	*9*	*4*	*1*	*4*	*0*	*0*	*0*	*0*	*25,350*
Barre	26	12	4	10	0	0	0	1	200,352
Becket	4	4	0	0	0	0	0	0	97,100
Bedford	3	2	0	1	0	1	0	0	400
Belchertown	34	9	7	18	0	0	0	0	109,920
Bellingham	27	9	16	2	0	1	0	0	95,647
Belmont	78	57	12	9	0	3	0	5	825,795
Berkley	38	9	14	15	0	0	0	0	59,500
Berlin	30	6	8	16	0	0	0	0	107,850
Bernardston	24	8	2	14	0	0	0	0	6,070
Beverly	16	16	0	0	0	3	0	3	126,050

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Abington	4	1	3	0	0	0	0	0	$71,000
Acton	0	0	0	0	0	0	0	0	0
Acushnet	2	0	1	1	0	0	0	0	3,500
Adams	5	4	1	0	0	1	0	0	9,650
Agawam	32	2	1	29	0	0	0	0	3,825
Alford	0	0	0	0	0	0	0	0	0
Amesbury	1	0	0	1	0	0	0	0	0
Amherst	25	5	0	20	0	0	0	0	3,400
Andover	5	1	2	2	0	0	0	0	1,000
Aquinnah	Fire Department in Good Standing, Certified No Fires to Report								
Arlington	3	3	0	0	0	0	0	0	100,200
Ashburnham	3	0	0	3	0	0	0	0	500
Ashby	0	0	0	0	0	0	0	0	0
Ashfield	0	0	0	0	0	0	0	0	0
Ashland	4	3	0	1	0	0	0	0	50,000
Athol	11	5	1	5	0	0	0	0	3,675
Attleboro	34	3	5	26	0	0	0	0	19,507
Auburn	9	1	1	7	0	0	0	1	14,000
Avon	8	0	1	7	0	0	0	0	476
Ayer	1	0	1	0	0	0	0	0	0
Barnstable Fire Districts									
Barnstable	*6*	*1*	*0*	*5*	*0*	*0*	*0*	*1*	*503*
Centerville	*4*	*2*	*0*	*2*	*0*	*0*	*0*	*0*	*1,950*
Cotuit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Hyannis	*26*	*6*	*5*	*15*	*0*	*3*	*0*	*0*	*85,230*
West Barnstable	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Barre	4	2	1	1	0	0	0	0	600
Becket	0	0	0	0	0	0	0	0	0
Bedford	0	0	0	0	0	0	0	0	0
Belchertown	0	0	0	0	0	0	0	0	0
Bellingham	2	0	2	0	0	0	0	0	10,200
Belmont	7	3	1	3	0	0	0	0	7,425
Berkley	4	0	1	3	0	0	0	0	1,000
Berlin	2	0	0	2	0	0	0	0	0
Bernardston	0	0	0	0	0	0	0	0	0
Beverly	1	1	0	0	0	0	0	0	2,000

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Billerica	16	2	14	0	2	0	0	3	$116,500
Blackstone	45	11	8	26	0	0	0	0	77,900
Blandford	Non-Reporting Community								
Bolton	4	1	3	0	0	0	0	0	9,000
Boston	4,588	1,944	717	1,927	4	76	0	181	41,609,365
Bourne	101	37	24	40	0	0	0	2	828,820
Boxborough	3	1	2	0	0	0	0	0	6,100
Boxford	59	11	11	37	0	3	0	5	29,700
Boylston	Non-Reporting Community								
Braintree	86	39	46	1	0	2	0	1	1,079,200
Brewster	50	16	8	26	0	1	0	1	33,300
Bridgewater	8	5	0	3	0	0	0	0	0
Brimfield	2	1	1	0	0	0	0	0	10,000
Brockton	276	151	124	1	1	21	0	15	2,742,500
Brookfield	4	4	0	0	0	0	0	1	0
Brookline	40	28	10	2	0	3	0	0	428,955
Buckland	Fire Department in Good Standing, Certified No Fires to Report								
Burlington	162	77	34	51	0	0	0	0	274,463
Cambridge	356	300	48	8	1	23	0	14	3,252,636
Canton	40	20	19	1	0	0	0	0	239,850
Carlisle	4	4	0	0	0	0	0	0	209,500
Carver	2	2	0	0	0	0	0	0	25,000
Charlemont	1	1	0	0	0	0	0	0	70,000
Charlton	34	11	11	12	0	0	0	0	18,925
Chatham	18	10	8	0	0	4	0	3	159,850
Chelmsford	63	29	31	3	0	3	0	0	346,050
Chelsea	377	223	64	90	1	0	0	52	2,274,085
Cheshire	2	2	0	0	0	0	0	0	160,000
Chester	2	1	1	0	0	0	0	0	600
Chesterfield	1	0	1	0	0	0	0	0	15,000
Chicopee	293	90	60	143	0	4	0	6	1,043,580
Chilmark	5	4	1	0	0	2	0	0	0
Clarksburg	7	2	2	3	0	1	0	0	8,200
Clinton	14	10	3	1	0	6	0	0	70,200
Cohasset	17	14	0	3	0	0	0	0	0

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Billerica	2	0	2	0	0	0	0	0	$0
Blackstone	9	0	0	9	0	0	0	0	2,500
Blandford	Non-Reporting Community								
Bolton	0	0	0	0	0	0	0	0	0
Boston	318	150	154	14	0	2	0	23	4,079,924
Bourne	26	3	4	19	0	0	0	0	79,400
Boxborough	0	0	0	0	0	0	0	0	0
Boxford	5	3	1	1	0	0	0	0	0
Boylston	Non-Reporting Community								
Braintree	10	4	5	1	0	0	0	0	68,500
Brewster	6	1	0	5	0	0	0	1	100
Bridgewater	2	2	0	0	0	0	0	0	0
Brimfield	0	0	0	0	0	0	0	0	0
Brockton	49	16	33	0	0	0	0	1	512,250
Brookfield	2	2	0	0	0	0	0	0	0
Brookline	1	0	1	0	0	0	0	0	0
Buckland	Fire Department in Good Standing, Certified No Fires to Report								
Burlington	5	3	1	1	0	0	0	0	4,100
Cambridge	22	17	3	2	0	1	0	0	78,187
Canton	2	0	2	0	0	0	0	0	15,400
Carlisle	0	0	0	0	0	0	0	0	0
Carver	0	0	0	0	0	0	0	0	0
Charlemont	1	1	0	0	0	0	0	0	70,000
Charlton	5	0	0	5	0	0	0	0	110
Chatham	1	1	0	0	0	0	0	0	50
Chelmsford	6	3	3	0	0	0	0	0	42,200
Chelsea	31	15	12	4	0	0	0	9	888,325
Cheshire	0	0	0	0	0	0	0	0	0
Chester	0	0	0	0	0	0	0	0	0
Chesterfield	0	0	0	0	0	0	0	0	0
Chicopee	69	5	5	59	0	0	0	0	21,500
Chilmark	0	0	0	0	0	0	0	0	0
Clarksburg	2	1	1	0	0	1	0	0	7,000
Clinton	2	1	1	0	0	0	0	0	6,000
Cohasset	1	1	0	0	0	0	0	0	0

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Colrain	10	5	3	2	0	0	0	0	$223,000
Concord	41	23	9	9	0	0	0	0	3,670,550
Conway	2	0	1	1	0	0	0	0	7,500
Cummington	4	3	1	0	0	0	0	0	0
Dalton	15	7	0	8	0	1	0	0	13,000
Danvers	47	24	23	0	0	2	0	0	828,545
Dartmouth Fire Districts									
Dartmouth Dst. 1	*34*	*20*	*6*	*8*	*0*	*3*	*0*	*0*	*7,165*
Dartmouth Dst. 2	*Fire Department in Good Standing, Certified No Fires to Report*								
Dartmouth Dst. 3	*106*	*47*	*34*	*25*	*0*	*1*	*0*	*1*	*0*
Dedham	121	28	25	68	0	2	0	1	422,890
Deerfield Fire Districts									
Deerfield	*7*	*1*	*1*	*5*	*0*	*0*	*0*	*0*	*18,350*
South Deerfield	*15*	*4*	*7*	*4*	*0*	*0*	*0*	*0*	*26,800*
Dennis	5	4	1	0	0	1	0	1	174,750
Devens	17	6	5	6	0	0	0	2	25,100
Dighton	44	3	4	37	0	1	0	0	8,300
Douglas	11	6	3	2	0	4	0	0	129,500
Dover	Non-Reporting Community								
Dracut	89	44	39	6	0	2	0	1	369,975
Dudley	16	12	4	0	0	1	0	0	155,300
Dunstable	1	1	0	0	0	0	0	0	0
Duxbury	61	31	9	21	0	0	0	2	659,300
East Bridgewater	25	11	10	4	0	0	0	2	230,110
East Brookfield	17	2	1	14	0	1	0	1	126,950
East Longmeadow	45	15	10	20	0	0	0	0	70,585
Eastham	33	15	5	13	0	3	0	0	58,050
Easthampton	52	17	10	25	1	1	0	0	6,200
Easton	37	25	11	1	0	0	0	0	771,850
Edgartown	15	6	5	4	4	0	0	0	0
Egremont	Fire Department in Good Standing, Certified No Fires to Report								
Erving	3	2	0	1	0	0	0	0	47,700
Essex	3	0	3	0	0	0	0	0	9,000
Everett	122	53	41	28	1	2	0	1	992,805
Fairhaven	57	24	11	22	0	4	0	3	336,450
Fall River	638	205	157	276	4	37	0	13	3,528,005
Falmouth	144	60	29	55	0	4	0	4	646,225

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Colrain	0	0	0	0	0	0	0	0	$0
Concord	4	0	0	4	0	0	0	0	1,800
Conway	0	0	0	0	0	0	0	0	0
Cummington	1	0	1	0	0	0	0	0	0
Dalton	1	0	0	1	0	0	0	0	0
Danvers	1	0	1	0	0	0	0	0	8,000
Dartmouth Fire Districts									
Dartmouth Dst. 1	*3*	*1*	*1*	*1*	*0*	*0*	*0*	*0*	*5,000*
Dartmouth Dst. 2	Fire Department in Good Standing, Certified No Fires to Report								
Dartmouth Dst. 3	*9*	*6*	*2*	*1*	*0*	*0*	*0*	*1*	*0*
Dedham	7	2	1	4	0	0	0	0	27,000
Deerfield Fire Districts									
Deerfield	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*
South Deerfield	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dennis	1	0	1	0	0	0	0	0	4,000
Devens	3	2	0	1	0	0	0	2	100
Dighton	8	0	0	8	0	0	0	0	5,000
Douglas	1	1	0	0	0	0	0	0	55,000
Dover	Non-Reporting Community								
Dracut	15	3	9	3	0	0	0	1	117,700
Dudley	0	0	0	0	0	0	0	0	0
Dunstable	0	0	0	0	0	0	0	0	0
Duxbury	2	0	1	1	0	0	0	0	15,000
East Bridgewater	3	1	1	1	0	0	0	0	1,160
East Brookfield	3	1	0	2	0	1	0	1	125,000
East Longmeadow	4	2	1	1	0	0	0	0	6,010
Eastham	5	1	0	4	0	0	0	0	1,700
Easthampton	5	0	1	4	0	0	0	0	3,000
Easton	3	3	0	0	0	0	0	0	250,100
Edgartown	0	0	0	0	0	0	0	0	0
Egremont	Fire Department in Good Standing, Certified No Fires to Report								
Erving	0	0	0	0	0	0	0	0	0
Essex	2	0	2	0	0	0	0	0	7,500
Everett	26	3	14	9	0	0	0	0	163,500
Fairhaven	24	6	3	15	0	2	0	2	110,950
Fall River	201	33	40	128	0	0	0	0	402,310
Falmouth	22	7	2	13	0	0	0	0	168,350

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Fitchburg	224	65	47	112	1	5	0	4	$547,190
Florida	8	1	4	3	0	0	0	0	4,200
Foxboro	42	6	17	19	0	1	0	0	187,650
Framingham	110	59	40	11	0	7	0	11	1,726,790
Franklin	76	19	7	50	0	1	0	0	556,363
Freetown	66	20	20	26	0	1	0	0	493,200
Gardner	106	29	26	51	0	2	0	0	331,900
Georgetown	5	3	1	1	0	0	0	0	119,150
Gill	7	3	0	4	0	0	0	0	0
Gloucester	66	25	7	34	2	3	0	9	798,844
Goshen	Fire Department in Good Standing, Certified No Fires to Report								
Gosnold	Fire Department in Good Standing, Certified No Fires to Report								
Grafton	59	18	13	28	0	0	0	1	52,550
Granby	43	12	6	25	0	0	0	3	412,350
Granville	8	1	1	6	0	0	0	0	2,500
Great Barrington	22	19	3	0	0	0	0	0	968,500
Greenfield	73	47	10	16	0	0	0	1	140,427
Groton	12	6	0	6	0	1	0	1	1,000
Groveland	4	1	3	0	0	0	0	0	52,000
Hadley	2	2	0	0	0	0	0	0	31,500
Halifax	7	5	2	0	0	0	0	0	318,000
Hamilton	62	46	3	13	1	1	0	0	147,800
Hampden	1	0	1	0	0	0	0	0	6,500
Hancock	1	1	0	0	0	0	0	0	5,000
Hanover	62	29	16	17	0	3	0	2	310,483
Hanson	4	4	0	0	0	0	0	0	150,000
Hardwick	Non-Reporting Community								
Harvard	15	8	1	6	0	0	0	0	151,000
Harwich	61	32	13	16	0	1	0	5	930,750
Hatfield	3	0	3	0	0	0	0	0	2,500
Haverhill	127	55	62	10	0	9	0	11	1,719,175
Hawley	1	1	0	0	0	0	0	0	0
Heath	1	1	0	0	0	0	0	0	2,500
Hingham	82	36	13	33	1	0	0	2	366,765

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Fitchburg	65	15	10	40	0	1	0	1	$158,175
Florida	1	0	0	1	0	0	0	0	0
Foxboro	1	0	0	1	0	0	0	0	100
Framingham	15	8	6	1	0	0	0	9	443,500
Franklin	15	1	0	14	0	0	0	0	1,150
Freetown	9	0	3	6	0	0	0	0	14,100
Gardner	11	4	1	6	0	0	0	0	163,380
Georgetown	0	0	0	0	0	0	0	0	0
Gill	0	0	0	0	0	0	0	0	0
Gloucester	14	1	2	11	0	0	0	0	79,511
Goshen	Fire Department in Good Standing, Certified No Fires to Report								
Gosnold	Fire Department in Good Standing, Certified No Fires to Report								
Grafton	13	1	1	11	0	0	0	0	2,150
Granby	2	0	0	2	0	0	0	0	100
Granville	0	0	0	0	0	0	0	0	0
Great Barrington	2	2	0	0	0	0	0	0	440,000
Greenfield	10	5	1	4	0	0	0	1	70,200
Groton	0	0	0	0	0	0	0	0	0
Groveland	0	0	0	0	0	0	0	0	0
Hadley	0	0	0	0	0	0	0	0	0
Halifax	0	0	0	0	0	0	0	0	0
Hamilton	0	0	0	0	0	0	0	0	0
Hampden	0	0	0	0	0	0	0	0	0
Hancock	0	0	0	0	0	0	0	0	0
Hanover	4	0	2	2	0	0	0	0	1,500
Hanson	0	0	0	0	0	0	0	0	0
Hardwick	Non-Reporting Community								
Harvard	0	0	0	0	0	0	0	0	0
Harwich	3	0	2	1	0	0	0	0	11,500
Hatfield	1	0	1	0	0	0	0	0	0
Haverhill	29	12	14	3	0	0	0	6	954,725
Hawley	0	0	0	0	0	0	0	0	0
Heath	0	0	0	0	0	0	0	0	0
Hingham	9	1	1	7	0	0	0	0	36,500

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Hinsdale	1	0	1	0	0	0	0	0	$0
Holbrook	9	5	4	0	1	0	0	0	118,800
Holden	48	15	6	27	0	3	0	0	324,400
Holland	27	15	3	9	0	0	0	0	179,873
Holliston	20	12	5	3	0	0	0	1	108,000
Holyoke	249	113	59	77	1	8	0	1	203,864
Hopedale	24	18	5	1	1	2	0	0	101,550
Hopkinton	21	7	14	0	0	1	0	3	671,800
Hubbardston	8	8	0	0	0	0	0	0	10,000
Hudson	75	28	22	25	0	6	0	1	2,453,730
Hull	41	13	5	23	0	3	0	0	194,000
Huntington	4	1	1	2	0	0	0	0	500
Ipswich	21	11	7	3	0	1	0	1	194,800
Kingston	84	21	16	47	0	1	0	1	181,686
Lakeville	23	13	6	4	0	2	0	1	272,851
Lancaster	14	8	6	0	0	1	0	0	417,000
Lanesboro	33	6	4	23	1	2	0	0	0
Lawrence	515	144	177	194	0	9	0	17	2,623,032
Lee	10	6	4	0	0	0	0	0	33,800
Leicester	36	11	8	17	0	0	0	0	100,000
Lenox	9	3	6	0	0	0	0	0	25,600
Leominster	116	72	37	7	0	8	0	1	772,298
Leverett	2	2	0	0	0	0	0	0	12,000
Lexington	47	24	19	4	0	2	0	3	698,650
Leyden	3	2	0	1	0	0	0	0	5,000
Lincoln	4	2	2	0	0	0	0	2	16,000
Littleton	30	8	10	12	0	2	0	0	200,265
Logan Airport	54	6	11	37	0	0	0	0	19,748
Longmeadow	12	10	2	0	0	3	0	0	2,612,520
Lowell	199	154	43	2	4	14	0	17	1,398,110
Ludlow	83	39	12	32	1	0	0	0	2,382,100
Lunenburg	36	21	13	2	0	5	0	1	833,210
Lynn	209	117	91	1	0	9	0	4	53,560
Lynnfield	5	4	1	0	0	0	0	0	95,000

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Hinsdale	0	0	0	0	0	0	0	0	$0
Holbrook	2	2	0	0	0	0	0	0	1,000
Holden	3	2	1	0	0	0	0	0	173,000
Holland	4	0	0	4	0	0	0	0	0
Holliston	2	0	1	1	0	0	0	0	31,000
Holyoke	89	23	13	53	0	3	0	0	71,542
Hopedale	0	0	0	0	0	0	0	0	0
Hopkinton	0	0	0	0	0	0	0	0	0
Hubbardston	1	1	0	0	0	0	0	0	10,000
Hudson	10	2	2	6	0	0	0	0	1,509,150
Hull	3	1	0	2	0	0	0	0	0
Huntington	0	0	0	0	0	0	0	0	0
Ipswich	1	0	0	1	0	0	0	0	0
Kingston	8	2	1	5	0	0	0	0	15,055
Lakeville	5	2	2	1	0	0	0	0	21,350
Lancaster	1	0	1	0	0	0	0	0	15,000
Lanesboro	1	0	0	1	0	0	0	0	0
Lawrence	172	22	81	69	0	0	0	4	829,301
Lee	0	0	0	0	0	0	0	0	0
Leicester	7	2	0	5	0	0	0	0	0
Lenox	0	0	0	0	0	0	0	0	0
Leominster	9	6	3	0	0	0	0	0	109,052
Leverett	0	0	0	0	0	0	0	0	0
Lexington	3	2	0	1	0	0	0	0	78,000
Leyden	0	0	0	0	0	0	0	0	0
Lincoln	1	0	1	0	0	0	0	0	0
Littleton	0	0	0	0	0	0	0	0	0
Logan Airport	3	0	0	3	0	0	0	0	10
Longmeadow	1	1	0	0	0	0	0	0	75,000
Lowell	23	15	7	1	0	0	0	0	8,100
Ludlow	13	2	1	10	0	0	0	0	5,900
Lunenburg	5	2	3	0	0	0	0	0	140,100
Lynn	37	14	22	1	0	0	0	1	13,500
Lynnfield	0	0	0	0	0	0	0	0	0

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Malden	118	24	20	74	0	1	0	1	$207,745
Manchester	31	13	3	15	0	0	0	0	32,950
Mansfield	78	18	23	37	0	2	0	2	159,900
Marblehead	13	10	3	0	0	0	0	0	78,100
Marion	3	1	2	0	0	0	0	0	24,775
Marlborough	119	23	26	70	0	1	0	1	332,810
Marshfield	4	3	1	0	0	0	0	0	0
Mashpee	78	27	11	40	0	5	0	0	66,562
Mattapoisett	48	18	12	18	1	0	0	1	73,400
Maynard	14	9	5	0	0	2	0	1	200,050
Medfield	47	14	4	29	0	0	0	0	41,100
Medford	99	48	36	15	2	2	0	9	2,294,925
Medway	19	7	2	10	0	0	0	0	0
Melrose	62	20	15	27	0	5	0	1	208,530
Mendon	2	2	0	0	0	0	0	0	21,500
Merrimac	27	10	7	10	0	0	0	0	0
Methuen	147	26	51	70	0	0	0	0	931,361
Middleboro	105	29	29	47	0	0	0	2	395,585
Middlefield	1	1	0	0	0	0	0	1	15,000
Middleton	36	20	7	9	0	5	0	0	239,200
Milford	127	58	27	42	0	5	0	7	862,750
Millbury	54	34	12	8	0	3	0	3	350,300
Millis	13	11	1	1	0	1	0	0	61,500
Millville	7	4	3	0	0	0	0	1	170,700
Milton	32	18	14	0	0	1	0	6	153,800
Monroe	Fire Department in Good Standing, Certified No Fires to Report								
Monson	35	18	5	12	0	0	0	1	178,020
Montague Fire Districts									
Montague	*19*	*7*	*2*	*10*	*0*	*0*	*0*	*0*	*23,900*
Turners Falls	*16*	*9*	*2*	*5*	*1*	*2*	*0*	*0*	*3,500*
Lake Pleasant	*Fire Department in Good Standing, Certified No Fires to Report*								
Monterey	Fire Department in Good Standing, Certified No Fires to Report								
Montgomery	Non-Reporting Community								
Nahant	10	7	3	0	0	0	0	0	3,600
Nantucket	38	18	9	11	0	0	0	0	127,350
Natick	56	37	19	0	0	0	0	0	726,590
Needham	59	21	15	23	0	0	0	1	269,300

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Malden	3	1	0	2	0	0	0	0	$0
Manchester	2	0	0	2	0	0	0	0	0
Mansfield	2	0	0	2	0	0	0	0	0
Marblehead	0	0	0	0	0	0	0	0	0
Marion	0	0	0	0	0	0	0	0	0
Marlborough	9	1	2	6	0	0	0	0	3,600
Marshfield	1	0	1	0	0	0	0	0	0
Mashpee	7	1	0	6	0	0	0	0	1,000
Mattapoisett	6	1	2	3	0	0	0	0	20,000
Maynard	0	0	0	0	0	0	0	0	0
Medfield	14	2	1	11	0	0	0	0	12,500
Medford	6	1	4	1	0	0	0	0	20,825
Medway	1	1	0	0	0	0	0	0	0
Melrose	2	1	1	0	0	0	0	0	0
Mendon	0	0	0	0	0	0	0	0	0
Merrimac	5	0	2	3	0	0	0	0	0
Methuen	20	2	7	11	0	0	0	0	98,310
Middleboro	17	7	3	7	0	0	0	1	187,000
Middlefield	0	0	0	0	0	0	0	0	0
Middleton	3	2	1	0	0	0	0	0	3,500
Milford	8	3	0	5	0	0	0	2	23,300
Millbury	4	2	0	2	0	0	0	0	1,100
Millis	0	0	0	0	0	0	0	0	0
Millville	0	0	0	0	0	0	0	0	0
Milton	0	0	0	0	0	0	0	0	0
Monroe	Fire Department in Good Standing, Certified No Fires to Report								
Monson	10	2	1	7	0	0	0	1	115,000
Montague Fire Districts									
Montague	*6*	*2*	*2*	*2*	*0*	*0*	*0*	*0*	*13,900*
Turners Falls	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*
Lake Pleasant	*Fire Department in Good Standing, Certified No Fires to Report*								
Monterey	Fire Department in Good Standing, Certified No Fires to Report								
Montgomery	Non-Reporting Community								
Nahant	0	0	0	0	0	0	0	0	0
Nantucket	0	0	0	0	0	0	0	0	0
Natick	2	0	2	0	0	0	0	0	7,500
Needham	6	0	0	6	0	0	0	0	0

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
New Ashford	1	0	1	0	0	0	0	0	$1,000
New Bedford	526	245	129	152	0	15	0	25	2,170,737
New Braintree	Fire Department in Good Standing, Certified No Fires to Report								
New Marlboro	Fire Department in Good Standing, Certified No Fires to Report								
New Salem	9	4	0	5	0	0	0	0	3,200
Newbury	40	6	34	0	0	0	0	0	621,000
Newburyport	37	27	8	2	0	7	0	3	7,500
Newton	203	140	53	10	5	11	0	15	22,497,970
Norfolk	45	22	5	18	0	0	0	0	186,070
North Adams	63	18	17	28	0	0	0	1	37,000
North Andover	44	28	10	6	0	5	0	2	3,270,315
North Attleboro	116	32	25	59	6	3	0	0	867,060
North Brookfield	4	3	1	0	0	1	0	0	43,000
North Reading	11	8	2	1	0	0	0	0	30,000
Northampton	121	34	33	54	0	1	0	0	1,050,090
Northboro	53	10	14	29	0	0	0	0	103,350
Northbridge	27	17	3	7	2	0	0	2	175,250
Northfield	1	1	0	0	0	0	0	0	15,000
Norton	107	35	22	50	0	1	0	0	153,175
Norwell	75	12	18	45	0	0	0	0	129,895
Norwood	96	15	30	51	0	0	0	0	378,600
Oak Bluffs	18	4	0	14	0	0	0	0	40,000
Oakham	15	10	1	4	0	0	0	3	99,800
Orange	56	15	6	35	0	1	0	3	2,000
Orleans	16	8	6	2	0	0	0	2	348,480
Otis	1	0	1	0	0	0	0	0	8,000
Oxford	4	2	2	0	0	0	0	2	101,700
Palmer Fire Districts									
Palmer	*45*	*10*	*14*	*21*	*0*	*2*	*0*	*2*	*565,400*
Three Rivers	*6*	*3*	*2*	*1*	*0*	*3*	*0*	*0*	*77,700*
Bondsville	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*10,000*
Paxton	8	6	2	0	0	0	0	0	76,750
Peabody	41	16	24	1	0	0	0	4	715,500
Pelham	2	1	0	1	0	0	0	0	1,500
Pembroke	36	16	14	6	0	1	0	1	272,165
Pepperell	64	36	2	26	0	0	0	0	2,600

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
New Ashford	0	0	0	0	0	0	0	0	$0
New Bedford	45	10	21	14	0	0	0	0	135,927
New Braintree	Fire Department in Good Standing, Certified No Fires to Report								
New Marlboro	Fire Department in Good Standing, Certified No Fires to Report								
New Salem	1	0	0	1	0	0	0	0	0
Newbury	0	0	0	0	0	0	0	0	0
Newburyport	0	0	0	0	0	0	0	0	0
Newton	11	5	4	2	0	0	0	0	60,720
Norfolk	3	0	0	3	0	0	0	0	0
North Adams	11	4	1	6	0	0	0	0	5,000
North Andover	2	0	1	1	0	0	0	0	1,200
North Attleboro	8	0	2	6	0	0	0	0	31,500
North Brookfield	0	0	0	0	0	0	0	0	0
North Reading	0	0	0	0	0	0	0	0	0
Northampton	24	3	5	16	0	1	0	0	17,120
Northboro	7	0	1	6	0	0	0	0	1,250
Northbridge	3	2	0	1	0	0	0	0	5,400
Northfield	0	0	0	0	0	0	0	0	0
Norton	13	4	3	6	0	0	0	0	40,000
Norwell	5	0	1	4	0	0	0	0	1,100
Norwood	11	1	2	8	0	0	0	0	500
Oak Bluffs	1	0	0	1	0	0	0	0	0
Oakham	0	0	0	0	0	0	0	0	0
Orange	17	3	0	14	0	0	0	2	0
Orleans	1	1	0	0	0	0	0	2	5,000
Otis	0	0	0	0	0	0	0	0	0
Oxford	0	0	0	0	0	0	0	0	0
Palmer Fire Districts									
Palmer	*6*	*0*	*0*	*6*	*0*	*0*	*0*	*0*	*2,200*
Three Rivers	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Bondsville	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Paxton	0	0	0	0	0	0	0	0	0
Peabody	3	1	2	0	0	0	0	2	18,000
Pelham	0	0	0	0	0	0	0	0	0
Pembroke	5	2	2	1	0	0	0	0	6,500
Pepperell	9	1	0	8	0	0	0	0	0

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Peru	1	1	0	0	0	0	0	0	$75,000
Petersham	10	4	1	5	0	0	0	0	0
Phillipston	8	3	1	4	0	0	0	0	7,150
Pittsfield	363	108	41	214	0	15	0	2	313,255
Plainfield	4	1	1	2	0	0	0	0	0
Plainville	9	5	4	0	0	0	0	0	51,700
Plymouth	245	71	41	133	0	3	0	2	876,396
Plympton	22	5	2	15	0	0	0	0	205,000
Princeton	7	1	1	5	0	0	0	0	500
Provincetown	26	15	4	7	0	0	0	0	74,265
Quincy	331	89	70	172	0	7	0	15	2,917,130
Randolph	26	5	8	13	0	0	0	0	57,500
Raynham	112	5	23	84	0	0	0	0	34,696
Reading	48	28	18	2	0	1	0	3	452,760
Rehoboth	15	12	2	1	0	0	0	1	256,000
Revere	229	57	70	102	0	8	0	9	684,850
Richmond	1	1	0	0	0	0	0	0	0
Rochester	13	11	1	1	0	0	0	0	416,000
Rockland	31	18	8	5	0	4	0	0	271,000
Rockport	3	2	1	0	0	0	0	0	29,000
Rowe	2	1	1	0	0	0	0	0	1,404,500
Rowley	17	7	5	5	0	0	0	0	26,100
Royalston	7	4	0	3	0	0	0	0	45,000
Russell	Fire Department in Good Standing, Certified No Fires to Report								
Rutland	32	9	4	19	0	1	0	0	169,525
Salem	225	46	36	143	1	3	0	10	842,480
Salisbury	71	20	24	27	0	3	0	0	457,350
Sandisfield	2	1	1	0	0	0	0	0	0
Sandwich	110	57	23	30	0	2	0	3	160,450
Saugus	74	34	25	15	0	0	0	7	152,015
Savoy	3	2	1	0	0	0	0	0	0
Scituate	89	37	12	40	2	1	0	0	206,411
Seekonk	63	26	16	21	0	0	0	2	401,415
Sharon	20	7	12	1	0	0	0	0	204,500
Sheffield	4	4	0	0	0	0	0	1	1,204,250

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Peru	0	0	0	0	0	0	0	0	$0
Petersham	0	0	0	0	0	0	0	0	0
Phillipston	1	0	0	1	0	0	0	0	250
Pittsfield	44	6	1	37	0	0	0	0	100,000
Plainfield	1	0	1	0	0	0	0	0	0
Plainville	0	0	0	0	0	0	0	0	0
Plymouth	18	2	1	15	0	0	0	0	3,701
Plympton	4	0	1	3	0	0	0	0	0
Princeton	0	0	0	0	0	0	0	0	0
Provincetown	0	0	0	0	0	0	0	0	0
Quincy	33	3	5	25	0	0	0	1	286,725
Randolph	0	0	0	0	0	0	0	0	0
Raynham	17	1	1	15	0	0	0	0	0
Reading	3	1	1	1	0	0	0	0	35,000
Rehoboth	0	0	0	0	0	0	0	0	0
Revere	21	7	10	4	0	0	0	3	262,300
Richmond	0	0	0	0	0	0	0	0	0
Rochester	0	0	0	0	0	0	0	0	0
Rockland	1	0	1	0	0	0	0	0	0
Rockport	0	0	0	0	0	0	0	0	0
Rowe	0	0	0	0	0	0	0	0	0
Rowley	1	1	0	0	0	0	0	0	0
Royalston	1	0	0	1	0	0	0	0	0
Russell	Fire Department in Good Standing, Certified No Fires to Report								
Rutland	0	0	0	0	0	0	0	0	0
Salem	42	1	9	32	1	0	0	0	23,635
Salisbury	9	2	3	4	0	0	0	0	182,900
Sandisfield	0	0	0	0	0	0	0	0	0
Sandwich	7	3	2	2	0	0	0	0	7,000
Saugus	12	1	8	3	0	0	0	3	42,000
Savoy	0	0	0	0	0	0	0	0	0
Scituate	10	0	0	10	0	0	0	0	1,009
Seekonk	6	0	1	5	0	0	0	1	370
Sharon	3	0	3	0	0	0	0	0	40,000
Sheffield	0	0	0	0	0	0	0	0	0

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Shelburne Fire Districts									
Shelburne	*5*	*3*	*2*	*0*	*0*	*0*	*0*	*0*	*$200,800*
Shelburne Falls	*6*	*5*	*0*	*1*	*0*	*0*	*0*	*0*	*818*
Sherborn	21	1	1	19	0	0	0	0	15,600
Shirley	42	28	4	10	0	0	0	0	0
Shrewsbury	52	36	14	2	0	4	0	0	165,900
Shutesbury	2	1	1	0	0	0	0	0	45,000
Somerset	48	10	14	24	0	5	0	1	599,875
Somerville	115	65	47	3	0	1	0	7	913,500
South Hadley Fire Districts									
So. Hadley-Dst. 1	*6*	*5*	*1*	*0*	*0*	*0*	*0*	*0*	*0*
So. Hadley-Dst. 2	*2*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*7,500*
Southampton	21	11	3	7	0	0	0	1	32,200
Southboro	65	25	15	25	0	2	0	0	121,210
Southbridge	44	28	11	5	0	6	0	3	456,470
Southwick	24	23	1	0	0	1	0	2	2,000
Spencer	68	17	12	39	0	1	0	3	98,802
Springfield	1,126	571	194	361	7	20	0	108	5,856,453
Sterling	14	4	10	0	0	0	0	0	132,437
Stockbridge	4	3	0	1	1	0	0	0	196,434
Stoneham	28	11	12	5	0	0	0	0	521,300
Stoughton	131	26	21	84	0	2	0	3	707,957
Stow	3	2	1	0	0	0	0	0	13,000
Sturbridge	63	22	17	24	0	1	0	0	107,025
Sudbury	13	7	5	1	0	0	0	0	690,475
Sunderland	4	4	0	0	0	0	0	0	0
Sutton	22	8	4	10	0	0	0	0	29,350
Swampscott	51	28	6	17	0	1	0	1	1,640,399
Swansea	69	15	21	33	0	3	0	2	0
Taunton	208	32	34	142	0	0	0	1	558,869
Templeton	11	3	1	7	1	1	0	0	226,250
Tewksbury	15	3	8	4	0	0	0	0	273,000
Tisbury	2	2	0	0	0	0	0	0	0
Tolland	Fire Department in Good Standing, Certified No Fires to Report								
Topsfield	79	60	7	12	0	0	0	0	80,610
Townsend	17	9	6	2	0	0	0	2	260,200
Truro	10	8	2	0	0	0	0	0	26,050

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Shelburne Fire Districts									
Shelburne	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Shelburne Falls	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Sherborn	4	0	0	4	0	0	0	0	0
Shirley	1	0	1	0	0	0	0	0	0
Shrewsbury	1	0	1	0	0	0	0	0	0
Shutesbury	1	0	1	0	0	0	0	0	20,000
Somerset	3	0	1	2	0	0	0	0	2,000
Somerville	8	3	5	0	0	0	0	0	9,300
South Hadley Fire Districts									
So. Hadley-Dst. 1	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
So. Hadley-Dst. 2	*1*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*7,500*
Southampton	4	1	0	3	0	0	0	1	1,500
Southboro	3	0	0	3	0	0	0	0	1,000
Southbridge	4	2	2	0	0	0	0	0	67,000
Southwick	5	5	0	0	0	0	0	0	0
Spencer	13	0	2	11	0	0	0	0	6,000
Springfield	308	50	42	216	1	2	0	16	1,307,530
Sterling	1	0	1	0	0	0	0	0	2,000
Stockbridge	0	0	0	0	0	0	0	0	0
Stoneham	3	0	1	2	0	0	0	0	700
Stoughton	25	3	3	19	0	0	0	2	411,100
Stow	0	0	0	0	0	0	0	0	0
Sturbridge	8	1	1	6	0	0	0	0	3,050
Sudbury	0	0	0	0	0	0	0	0	0
Sunderland	0	0	0	0	0	0	0	0	0
Sutton	2	0	0	2	0	0	0	0	2,200
Swampscott	6	2	0	4	0	0	0	0	300
Swansea	15	2	0	13	0	0	0	0	0
Taunton	65	3	11	51	0	0	0	0	104,064
Templeton	7	2	0	5	1	0	0	0	212,000
Tewksbury	1	0	1	0	0	0	0	0	3,000
Tisbury	0	0	0	0	0	0	0	0	0
Tolland	Fire Department in Good Standing, Certified No Fires to Report								
Topsfield	0	0	0	0	0	0	0	0	0
Townsend	2	2	0	0	0	0	0	0	55,000
Truro	0	0	0	0	0	0	0	0	0

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Tyngsboro	13	7	5	1	0	0	0	0	$345,000
Tyringham	Fire Department in Good Standing, Certified No Fires to Report								
Upton	41	24	3	14	1	0	0	0	244,500
Uxbridge	2	2	0	0	0	1	0	0	30,000
Wakefield	104	81	17	6	1	0	0	2	251,150
Wales	2	1	1	0	0	0	0	0	100
Walpole	93	34	14	45	0	1	0	5	2,801,875
Waltham	90	50	33	7	0	4	0	0	1,000,199
Ware	79	26	9	44	0	2	0	7	408,705
Wareham Fire Districts									
Wareham	*132*	*40*	*27*	*65*	*0*	*3*	*0*	*1*	*69,296*
Onset	*41*	*18*	*9*	*14*	*0*	*0*	*0*	*0*	*900*
Warren	13	8	4	1	0	1	0	0	121,650
Warwick	4	0	1	3	0	0	0	0	0
Watertown	21	9	10	2	0	0	0	0	3,273,000
Wayland	3	2	1	0	0	0	0	0	7,200
Webster	35	14	15	6	0	0	0	0	384,550
Wellesley	93	43	15	35	0	1	0	0	119,350
Wellfleet	9	5	4	0	0	0	0	0	5,650
Wendell	Fire Department in Good Standing, Certified No Fires to Report								
Wenham	17	4	4	9	0	0	0	0	47,865
W. Boylston	3	2	0	1	0	0	0	0	50,000
W. Bridgewater	49	24	25	0	0	1	0	1	211,206
W. Brookfield	1	1	0	0	0	0	0	0	1,000
W. Newbury	14	6	0	8	0	1	0	0	25,500
W. Springfield	137	61	28	48	0	2	0	0	730,008
W. Stockbridge	12	2	1	9	0	0	0	0	75,000
W. Tisbury	1	0	1	0	0	0	0	0	0
Westborough	79	29	14	36	0	2	0	0	325,635
Westfield	150	49	43	58	0	3	0	1	742,410
Westford	3	3	0	0	0	1	0	0	132,584
Westhampton	4	2	2	0	0	0	0	0	8,500
Westminster	54	18	14	22	0	0	0	3	333,535
Weston	16	4	12	0	0	0	0	0	43,100
Westport	85	10	28	47	0	0	0	0	48,918
Westwood	113	72	14	27	0	1	0	3	538,600
Weymouth	96	51	37	8	0	0	0	3	1,068,770

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Tyngsboro	1	1	0	0	0	0	0	0	$0
Tyringham	Fire Department in Good Standing, Certified No Fires to Report								
Upton	3	0	0	3	0	0	0	0	0
Uxbridge	0	0	0	0	0	0	0	0	0
Wakefield	2	1	0	1	0	0	0	0	0
Wales	0	0	0	0	0	0	0	0	0
Walpole	10	2	0	8	0	0	0	3	2,000,020
Waltham	9	7	1	1	0	0	0	0	72,750
Ware	19	2	3	14	0	0	0	0	35,500
Wareham Fire Districts									
Wareham	*15*	*3*	*5*	*7*	*0*	*0*	*0*	*0*	*18,000*
Onset	*2*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*800*
Warren	0	0	0	0	0	0	0	0	0
Warwick	0	0	0	0	0	0	0	0	0
Watertown	1	1	0	0	0	0	0	0	500
Wayland	0	0	0	0	0	0	0	0	0
Webster	10	10	0	0	0	0	0	0	241,500
Wellesley	6	0	0	6	0	0	0	0	0
Wellfleet	0	0	0	0	0	0	0	0	0
Wendell	Fire Department in Good Standing, Certified No Fires to Report								
Wenham	2	0	0	2	0	0	0	0	15
W. Boylston	0	0	0	0	0	0	0	0	0
W. Bridgewater	2	0	2	0	0	0	0	0	20,500
W. Brookfield	0	0	0	0	0	0	0	0	0
W. Newbury	0	0	0	0	0	0	0	0	0
W. Springfield	33	6	4	23	0	2	0	0	68,326
W. Stockbridge	0	0	0	0	0	0	0	0	0
W. Tisbury	0	0	0	0	0	0	0	0	0
Westborough	1	0	0	1	0	0	0	0	0
Westfield	22	5	4	13	0	0	0	0	168,050
Westford	1	1	0	0	0	1	0	0	124,584
Westhampton	0	0	0	0	0	0	0	0	0
Westminster	5	0	0	5	0	0	0	0	0
Weston	1	0	1	0	0	0	0	0	0
Westport	11	1	2	8	0	0	0	0	2,510
Westwood	4	1	0	3	0	0	0	0	0
Weymouth	12	6	3	3	0	0	0	0	417,300

Fire Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Whately	3	3	0	0	0	0	0	0	$0
Whitman	59	14	9	36	3	14	0	1	633,922
Wilbraham	54	9	9	36	0	0	0	0	143,700
Williamsburg	3	0	2	1	0	0	0	0	32,250
Williamstown	30	25	4	1	0	1	0	2	103,100
Wilmington	39	15	24	0	0	2	0	0	15,000
Winchendon	17	7	8	2	0	0	0	0	105,400
Winchester	10	8	2	0	1	1	0	1	2,500
Windsor	5	2	3	0	0	0	0	0	176,700
Winthrop	93	67	4	22	0	4	0	0	483,091
Woburn	98	32	52	14	1	1	0	0	353,550
Worcester	1,431	435	235	761	4	8	0	70	3,336,355
Worthington	3	3	0	0	0	0	0	0	144,800
Wrentham	57	15	8	34	0	1	0	0	159,384
Yarmouth	108	30	18	60	3	2	0	1	770,587

Arson Experience by Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Whately	0	0	0	0	0	0	0	0	$0
Whitman	11	2	1	8	0	0	0	0	5,121
Wilbraham	9	0	1	8	0	0	0	0	2,000
Williamsburg	0	0	0	0	0	0	0	0	0
Williamstown	1	0	0	1	0	0	0	0	4,000
Wilmington	1	1	0	0	0	0	0	0	0
Winchendon	1	0	1	0	0	0	0	0	7,000
Winchester	2	2	0	0	0	0	0	0	0
Windsor	0	0	0	0	0	0	0	0	0
Winthrop	11	2	1	8	0	0	0	0	11,501
Woburn	9	2	6	1	0	0	0	0	72,000
Worcester	336	24	49	263	0	0	0	11	703,035
Worthington	0	0	0	0	0	0	0	0	0
Wrentham	13	0	2	11	0	0	0	0	16,372
Yarmouth	16	2	1	13	0	0	0	0	154,451

2000 Fires by Type of Situation Found

Situation Found	Total Fires	% of Total	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Structure Fires	10,279	41.0%	63	523	0	760	$155,795,398
Outside w/Value	884	4.0%	0	5	0	11	9,832,175
Vehicle Fires	5,473	22.0%	13	34	0	33	20,684,612
Brush Fires	4,067	16.0%	0	11	0	26	179,481
Rubbish Fires	2,799	11.0%	0	4	0	2	228,348
Explosions	152	1.0%	1	14	0	0	70,205
Spill Fires	86	0.3%	0	4	0	0	63,833
Other Fires	1,191	5.0%	2	24	0	5	2,995,202
Total Fires	**24,931**	**100%**	**79**	**619**	**0**	**837**	**$189,849,254**

2000 Arsons* by Type of Situation Found

Situation Found	Total Fires	% of Total	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Structure Arsons	747	22.0%	2	19	0	98	$16,420,019
Outside w/Value	223	7.0%	0	0	0	0	156,515
Vehicle Arsons	798	24.0%	1	0	0	6	4,474,299
Brush Arsons	838	25.0%	0	2	0	11	71,090
Rubbish Arsons	685	20.0%	0	0	0	0	37,900
Explosions	4	0.1%	0	0	0	0	500
Spill Arsons	4	0.1%	0	0	0	0	0
Other Arsons	61	1.0%	0	0	0	0	179,356
Total Arsons	**3,360**	**100%**	**3**	**21**	**0**	**115**	**$21,336,679**

*For statistical purposes, a fire is considered arson when the ignition factor is incendiary or suspicious.

2000 Fires by County

County	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Barnstable	1,017	427	209	381	6	33	0	33	$5,202,229
Berkshire	600	231	95	274	2	23	0	6	3,507,109
Bristol	2,615	832	641	1,142	10	77	0	49	10,650,352
Dukes	41	16	7	18	4	2	0	0	40,000
Essex	2,168	848	658	662	4	65	0	77	15,723,461
Franklin	280	132	40	108	1	3	0	5	2,421,165
Hampden	2,430	1,072	469	889	9	49	0	123	15,341,888
Hampshire	449	152	88	209	1	4	0	13	2,439,210
Middlesex	3,007	1,695	838	474	18	102	0	108	53,372,915
Nantucket	38	18	8	11	0	0	0	0	127,350
Norfolk	1,769	628	430	711	1	25	0	38	12,891,067
Plymouth	1,721	673	424	624	8	56	0	34	9,377,529
Suffolk	5,341	2,297	866	2,178	5	88	0	242	45,071,139
Worcester	3,455	1,258	699	1,498	10	80	0	109	13,633,840
Total	**24,931**	**10,279**	**5,473**	**9,179**	**79**	**619**	**0**	**837**	**$189,799,254**

2000 Arsons* by County

County	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Barnstable	131	29	17	85	0	3	0	4	$520,234
Berkshire	65	16	4	45	0	2	0	0	495,650
Bristol	480	73	97	310	0	2	0	3	1,127,578
Dukes	1	0	0	1	0	0	0	0	0
Essex	375	66	158	151	0	1	0	16	2,265,397
Franklin	38	11	4	23	0	0	0	3	174,100
Hampden	605	103	73	429	1	7	0	17	1,846,883
Hampshire	84	12	13	59	0	1	0	1	68,120
Middlesex	238	99	79	60	0	2	0	12	3,096,841
Nantucket	0	0	0	0	0	0	0	0	0
Norfolk	188	29	30	129	0	0	0	6	3,307,943
Plymouth	186	43	64	79	0	0	0	2	937,546
Suffolk	384	174	177	33	0	2	0	35	5,242,060
Worcester	585	92	82	411	1	2	0	16	2,254,321
Total	**3,360**	**747**	**798**	**1,815**	**3**	**21**	**0**	**115**	**$21,336,679**

*For statistical purposes, a fire is considered arson when the ignition factor is incendiary or suspicious.